CRANFIELD UNIVERSITY

Deborah Catherine Simpson

An explanatory theory of power in inter-organisation relationships:
Evidence from the aerospace and defence industry
Volume of Appendices

School of Management

PhD
Academic Year: 2021 - 2022

Supervisor: Professor Richard Wilding O.B.E
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This volume of appendices is submitted in partial fulfilment of the
requirements for the degree of PhD

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

CADB	Central Analysis Database
CEO	Chief Executive Officer
CS	Confirmatory Study
CS-RQ	Confirmatory Study Research Question
CQ	Critical Theoretical Question
DCR	Dialectical Critical Realism
DNA	Deoxyribonucleic acid (unique genetic code)
ED	Educative Process
ES	Exploratory Study
ES-RQ	Exploratory Study Research Question
F&R	French and Raven
fsQCA	Fuzzy-set Qualitative Comparative Analysis
IDEF	Integration Definition for Function Modelling (language)
IOR	Inter-Organisation Relationship
IOR-power	Power in IORs
IPA	Interpretative Phenomenological Analysis
IT	Information Technology
KMV	Key Mediating Variables Model (trust-commitment theory)
LE	Life Experience Process (verification / falsification)
RQ	Research Question (main)
SCM	Supply Chain Management
SLR	Systematic Literature Review
SLRQ	Systematic Literature Review Question
LSS	Scoping Study
TA	Theoretical Analysis Process
TD1	Theory Development Phase 1
TD2	Theory Development Phase 2
TS	Test Case Study
TS-RQ	Test Case Study Research Question
TCE	Transaction Cost Economics

INTRODUCTION

This volume of appendices supports the thesis positing an explanatory theory of IOR-power in exposing further details of the theory, debates, methodology, and data analyses that are informative but not necessary to follow the argument of the thesis. The appendices are accordingly aligned to thesis chapters. As indicated in Appendix A, independent supplementary appendices (S-Appendices) offering more extensive details are available on request. As shown in Figure-1 these align to the discrete studies outlined in the thesis research project overview.
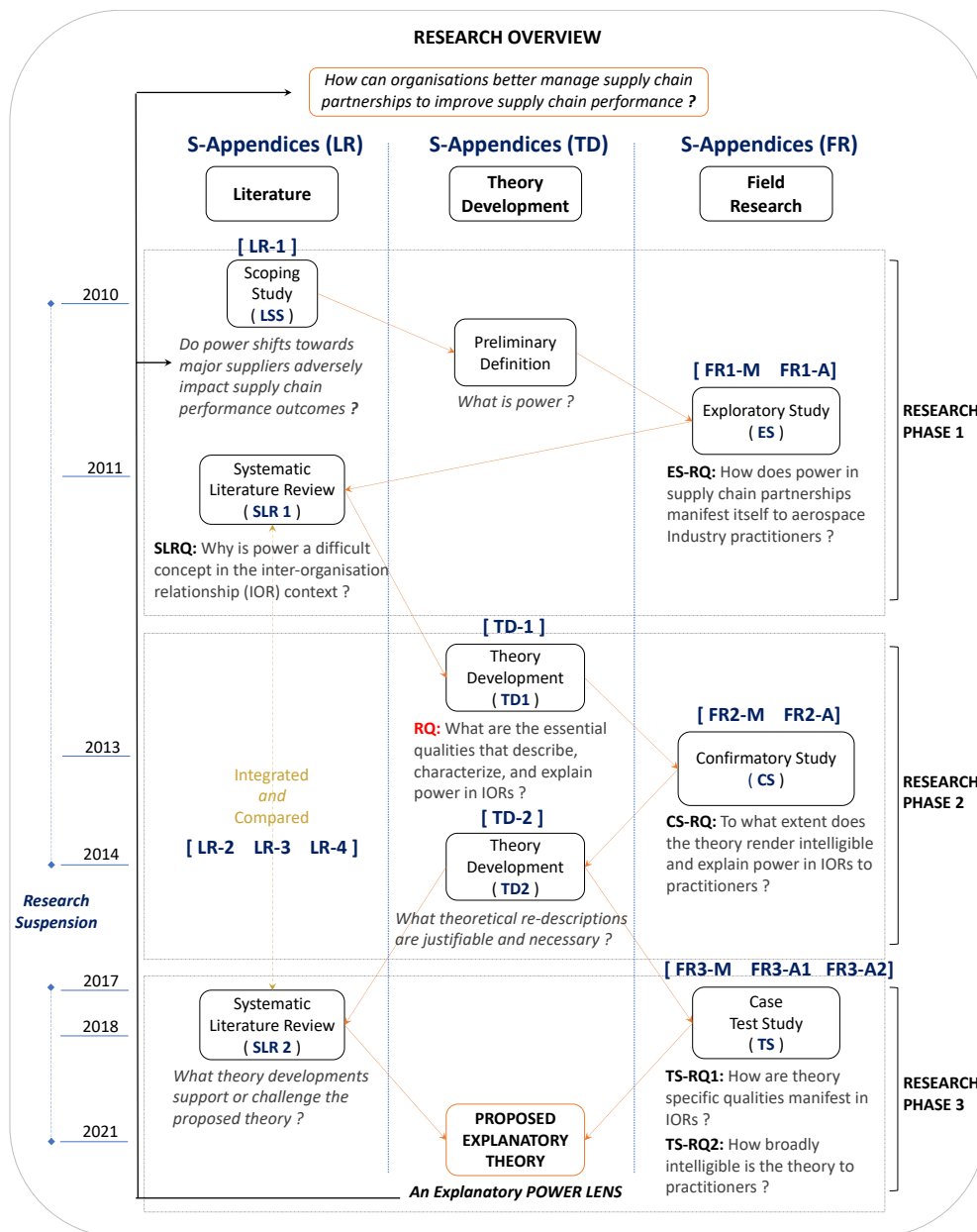
Figure-1. Introductory research project overview

Figure-2 complements the introductory research project overview in exhibiting alignment and connections between questions and propositions advanced in the thesis at the different stages of research.
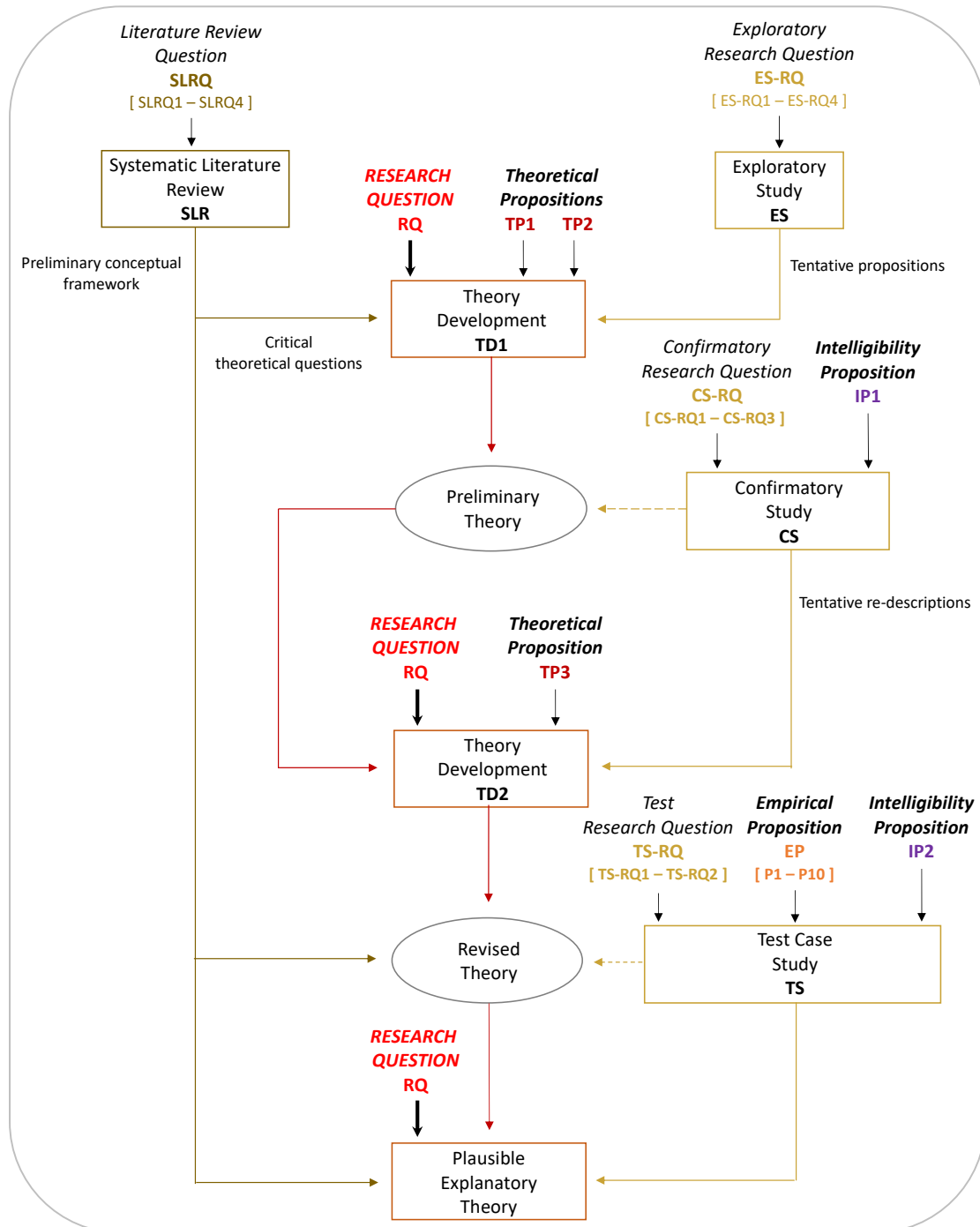
Figure-2. Summary of questions and propositions advanced

Appendix A Supplementary appendices

A.1 Appendix listing

Independent supplementary appendices (S-Appendices) collate and expose further, development of the theory, methodology employed across studies, and more extensive detailed data analyses and findings. As indicated in Figure-1, each appendix is dedicated to a discrete stage of the research and uses notation LR (literature review), TD (theory development), and FR (field research) to distinguish between the three aspects of research undertaken. Table A-1 lists and summarises the content of each supplementary appendix. These appendices are available in electronic format on request.

S-Appendix Reference Code	Content
LR-1	Systematic literature reviews methodology
LR-2	Systematic literature reviews Stage 1 – Planning (including scoping study [LSS])
LR-3	Systematic literature reviews Stage 2 – Identifying and evaluating studies
LR-4	Systematic literature reviews Stage 3 – Extracting and synthesising data
TD-1	Theory development Phase 1 (TD1)
TD-2	Theory development Phase 2 (TD2)
FR1-M	Exploratory study methodology (ES)
FR1-A	Exploratory study data analysis and findings (ES)
FR2-M	Confirmatory study methodology (CS)
FR2-A	Confirmatory study data analysis and findings (CS)
FR3-M	Test case study methodology (TS)
FR3-A1	Test case study data analysis and findings (TS) – Theory specific qualities testing
FR3-A2	Test case study data analysis and findings (TS) – Theory intelligibility

Table A-1. Summary of supplimentary appendices provided

Appendix B Literature

B.1 Supply chain management (SCM) debates

B.1.1 Sustained competitive advantage

Theories of firm sustained competitive advantage haves been largely structured around a single organising framework focusing analysis externally to a firm's market opportunities and threats, and internally to a firm's strengths and weaknesses, to devise strategies to gain competitive advantage (Ambrosini and Bowman, 2009; Barney, 1991; Dyer and Singh, 1998; Porter, 1980, 1985; Theriou, Aggelidis and Theriou, 2009). Reportedly, there are a proliferation of definitions of sustained competitive advantage (Barney, 2001a) but sustained competitive advantage generally refers to how firms are able to persistently achieve superior performance that translates into supernormal or higher than expected returns (Barney, 1991; Dyer and Singh, 1998; Ma, 2000; Porter, 1985). This has been expressed in various ways including through theorised sources of sustained competitive advantage that lead to firms occupying a strong market position, being more efficient and effective (Barney, 1991, 2001a), and creating enhanced value (Eisenhardt and Martin, 2000; McWilliams and Siegel, 2011). The latter two definition types readily apply to non-profit organisations in respect of resource mobilization strategies (Johnson and Prakash, 2007; Yanacopulos, 2005) and broader corporate social responsibility (CSR) activities concerning non-market goods, such as pollution abatement (McWilliams and Siegel, 2011).

Industry structure view (IO)

A perspective emphasising external industry factors as the main sources or determinants of firm competitive advantage is generally referred to as the industrial organisation (IO) or industry structure view (Dyer and Singh, 1998). Prominent strategy models and typologies of 'low cost', 'differentiation' 'focus' (Porter, 1980), and 'prospectors', 'defenders', 'analyzers', 'reactors' (Miles et al., 1978) originate from this perspective (Collis, 1991; Parnell, 2002). Firms are recognized to make critical strategic choices in how best to *adapt to* the environment, not least which markets to target, and how to best configure or

structure organisations. Firm performance thus is held to be driven by but only "partially preordained by environmental conditions" (Miles *et al.*, 1978 p.548).

Resource base view (RBV)

A resources based view (RBV) is a prominent perspective focusing attention on internal strengths and weaknesses of an organisation and has theoretical origins tracing back to Penrose's work (Penrose, 1952, 1955) and theory (Penrose, 1959) on the growth of firms (Ambrosini and Bowman, 2009). This view challenges two underlying assumptions of the IO view (Barney, 1991). First, that strategically relevant resources held by firms and strategies pursued by firms are identical in a given industry or even a strategic group (Porter, 1980). Second, that benefits gained from heterogeneity in resources that might arise would only be short-term given resources can always be bought (resource mobility) resulting in homogeneity being restored. It is argued that resources defined as "strengths that firms can use to conceive of and implement their strategies" (Barney, 1991 p.101) may be heterogeneous and not perfectly mobile across organisations thereby potential sources of *sustained* competitive advantage, as Porter's value chain model (Porter, 1985) is held to points to (Barney, 1991).

Adopting a broad perspective of resources as *physical*, *human*, and *organisational* capital resources, it is posited that these resources may be a source of sustained competitive advantage when: (a) *valuable* in the sense that they enable exploiting environmental opportunities and/or neutralising threats, (b) *rare* among an organisation's current and potential competition, (c) *imperfectly imitable* due to for example historical conditions, thereby difficult to systematically replicate, and lastly there are (d) *no* strategically equivalent *substitutes* for this resource that are valuable, but neither rare or imperfectly imitable. Together these qualities attract the acronym of VRIN (Barney, 1991).

Scholars assert that technological competences and skills are crucial to sustained competitive advantage (Bettis, Bradley and Hamel, 1992; Quinn, Doorley and Paquette, 1990), where technology is defined as "the systematic application of knowledge for useful purposes" (Quinn, Doorley and Paquette, 1990 p.80). Arguing knowledge to be an organisation's preeminent productive

resource, it is advocated focus be given to developing means to integrate individual knowledge into productive activity generally referred to as the knowledge based view (KBV) (Grant, 1997; Theriou, Aggelidis and Theriou, 2009). Both RBV and KBV resonates with core competence based strategies, that is building a firms strategic market position around a valued differentiating competence(s) as a core competence such as display systems or microchip technology (Prahalad and Hamel, 1990) rather than end products. Non-core competences may then be outsourced to suppliers.

IO and RBV critical stances

RBV theory stands in part as a critique of the IO view but is itself not free from critical attention. Three strong challenges are argued to threaten the utility of RBV as a core theory of *organisations* (Kraaijenbrink, Spender and Groen, 2010). First, RBV offers only a narrow explanation of competitive advantage. Second, resources and value, as core theory concepts necessitate clear definitions that must account for the subjective nature of value and what constitutes and distinguishes resources. Third, that resources satisfy VRIN criteria is neither necessary nor sufficient to achieve sustained competitive advantage; other factors such as human imagination, uncertainty, and timing require incorporating to move RBV from a static to a dynamic theory. In summary, it is suggested RBV be recognised as a theory of sustained competitive advantage, not organisations, greater emphasis be accorded to individual mental models in how value is assessed and created, and the contributory role of different resource types rendered clear, notably inputs versus enablers (Kraaijenbrink, Spender and Groen, 2010) thereafter resource synergistic benefits (Kraaijenbrink, Spender and Groen, 2010; Simons et al., 2003).

The extent to which RBV is a dynamic perspective (Teece and Pisano, 1994) appears to rest in how resources are defined and in recognising how RBV aligns to both equilibrium and evolutionary economic perspectives (Ambrosini and Bowman, 2009; Barney, 2001b, 2001a). Notwithstanding, dynamic capabilities of organisations (Teece and Pisano, 1994) brings to the forefront a key tenet of Penrose's theory of the growth of firms where "dynamic refers to the environment

rather than the capability" (Ambrosini and Bowman, 2009 p.30) and capability refers to an organisation's entrepreneurial ability to adapt to the environment. These competences are built, path dependent, and embedded in the firm (Ambrosini and Bowman, 2009; Eisenhardt and Martin, 2000) but as any resource not necessarily VRIN resources (Eisenhardt and Martin, 2000).

Although some empirical evidence shows competitive advantage to be more attributed to a firm's capabilities than its industry position (Barney, 2001b; Gjerde, Knivsflå and Sættem, 2010) both perspectives are argued to be important in strategy formulation and execution (Barney, 1991; Collis, 1991; Parnell, 2002) given in industry markets "strategy is concerned with the optimal application of the resources a firm possesses relative to competitors" (Collis, 1991 p.65). Neither views severely or jointly however are considered to fully capture the implications of organisations as embedded social entities nor the realities of markets (Autry and Griffis, 2008; Cousins et al., 2006; Cox, 1999; Dyer and Singh, 1998; Ghoshal and Moran, 1996; Ma, 2000). The following alternative perspectives expose limitations of both prominent firm-based views (IO and RBV), commencing with the relational view through to a supply chain view that leads to exposing the potential scope and complexity of supply chain management.

Relational view

Standing in direct contrast to both IO and RBV views is the relational view (Dyer and Singh, 1998). Attention is drawn to how inter-firm relations can generate rents that neither party could generate alone namely through relation-specific asset investments, knowledge exchange, combining complementary resources, and lastly efficient (less costly) and effective (value generating) inter-firm governance mechanisms. The essential point is that the opportunity to create enhanced value through inter-firm relations leads to consideration of alternative competitive advantage strategies. Most notably, contrasting with an IO view, where a firm would seek a broad supplier base to gain leverage over its suppliers (Porter, 1980) a relational view would advocate reducing the supplier base to foster generating relational benefits (Dyer and Singh, 1998). As briefly reviewed in

Section B.2.4, IOR scholars generally advocate a segmented approach to supply base management centred on criticality of resources and risk versus benefit associated with closer working relationships.

Competitive advantage system

It is also argued that no single factor be that resource endowments; industry structure, time, culture, co-operation and so forth, is sufficient to explain or attempt to guide a firm to success. Firms such as Sony and Intel exemplify multiple strategies in operation with one goal, to achieve *persistent* superior performance (Ma, 2000). Developed through a synthesis of influential competitive advantage theories, a proposed advantage system claims to offers a more appropriate holistic view in linking three recognisable core strategic components of capability, position, and action (Ma, 2000).

The capability component encompasses RBV and efficiency views including transaction cost economics (TCE) (Williamson, 1975). The position component draws from the IO view on firm market position but embraces ecological views that accords relevance to ensuring the competitive position of an industry (or product market) as an eco-system in relation to other potentially competing eco-systems (Moore, 1996). An action component (innovation; hypercompetition; co-opetition; commitment) captures a range of strategic actions firms may variably take to enhance competitive advantage drawing from various perspectives. The first innovation, as the creative destruction of the status quo through entrepreneurial competences (Schumpeter, 1934). Second, hypercompetition that involves frequent innovation in assuming advantages will be short-term (D'Aveni, 1994). Third, co-opetition that promotes benefiting from co-operation whilst competing with another firm changing how the competitive game is played (Brandenburger and Nalebuff, 1996). Lastly, commitment as in perseverance in strategic direction given significant irreversible investments tend to be necessary to gain competitive advantage (Caves, 1984).

Obtaining persistent competitive advantage requires understating the dynamic links between the three components (capability, position, action) and competitive advantages as they are (actual) and how they might be (potential). Management

challenges include addressing questions such how to constantly improve efficiency given market power can always be eroded? How to transform resource endowments into capabilities, especially less tangible knowledge-based endowments? When to act as a first mover in innovation and when to adopt a follower position and imitate? Moreover, competitive advantage is argued to be a dynamic system of actual and potential advantages requiring constant management (Ma, 2000).

Organisational economy

Prescribed firm strategies emanating from the IO view are further challenged. As highlighted by Teece and Pisano (1994), "Indeed, what is distinctive about firms is that they are domains for organizing activity in a non-market-like fashion" (p.540). That is, it entails more than adherence to rules that mark the IO perspective rather it depends on internal management ability to make sense of the environment and devise means to adapt, extend, possibly discard bundles of resources to meet challenges and opportunities, present and future (Ambrosini and Bowman, 2009; Barney, 2001a; Eisenhardt and Martin, 2000; Kraaijenbrink, Spender and Groen, 2010; Teece and Pisano, 1994). This stance resonates with a compelling critique of transaction cost economics (TCE) arguing organisations to be far more than a means of structuring efficient transactions rather and not least involves "leveraging the human ability to take initiative, to cooperate, and to learn" (Ghoshal and Moran, 1996 p.42).

A call for a theory that explains an organizational economy rather than a market economy (Ghoshal and Moran, 1996) aligns with calls for greater recognition of social capital and a move towards a socio-economic perspective of firms and related networks (Autry and Griffis, 2008; Cousins et al., 2006; Krause, Handfield and Tyler, 2007; Mandják and Szántó, 2010). This entails fully accounting for "economic psychological and social psychological peculiarities of social relationships in addition to the classical, profit-oriented, and cost-cutting approach to economic management" (Mandják and Szántó, 2010 p.207). It is also where the informal organisation as the "self-generated, self-organised and self-

managed interrelationships" (Morton *et al.*, 2004 p.215) plays a significant role cutting across formal structures and processes (Morton et al., 2004, 2006).

Corporate social responsibility

Consistent with a call for a socio-economic perspective of firms is a corresponding mounting demand and expectation for firms to act in a socially and environmentally sustainable manner. A vast literature captures different views on what, how, when, and why such matters are a concern for firms (Latapí Agudelo, Jóhannsdóttir and Davídsdóttir, 2019; Phillips, Schrempf-Stirling and Stutz, 2020; Wood, 1991). Seeking to establish what corporate social responsibility (CSR) entails has generated a range of concepts and models including corporate social performance (CSP) (Wood, 1991), triple bottom line (Elkington, 1994), and creation of shared value (CSV) (Porter and Kramer, 2006). It appears that hindering such debates is clarity and consensus on what a firm essentially is given this is necessary to understand how firms should interact with society (Chaffee, 2017).

The legal perspective put forth by Chaffee (2017) is that firms are not merely artificial, or real, or aggregate entities that respectively emphasise the role of government (artificial), role of corporation (real), or role of individuals (aggregate) rather firms are collaborative entities. Firms are incorporated under government contract to pursue profits collaboratively that implies firms working in common effort with governments (acting on behalf of the public) to advance economic development but having a duty of good faith towards government advancing social development. Firms therefore are obligated to engage in socially responsible behaviour but permitted to act in a socially irresponsible manner in pursuit of profits *if* the financial benefit is clear and incontestable. It is the responsibility of government to use legal means to impose requisite financial incentives or penalties to ensure that profit-seeking does not override sought after social advancement. Relatedly, from an RBV perspective it is claimed that attributing economic value to CSR activities is not infeasible (McWilliams and Siegel, 2011) but from an IO perspective the way forward is creating shared value (CSV) (Porter and Kramer, 2006).

The afore legal perspective juxtaposed to a political CSR perspective that includes how and why firms are able and willing to usurp or influence CSR legislation to favour economic benefits over social benefits (Frynas and Stephens, 2015) however suggests that either CSR practices are rendered economically beneficial for firms, or the advancing of social interests will be limited. It is strongly argued on various levels that the concept of creating shared value (CSV) (Porter and Kramer, 2006) does nothing to address deep rooted conflicts firms continuously face of economic self-interest versus broader society needs (Crane et al., 2014). Similar to Ghoshal and Moran's (1996) claim that TCE is bad for practice, is the claim that CSV merely seeks to re-legitimize the prevailing capitalist system and does not address the fundamental issue of corporate social responsibility.

> "Many corporate decisions related to social and environmental problems, however creative the decision-maker may be, do not present themselves as potential win-wins, but rather will manifest themselves in terms of dilemmas. In an ethical dilemma, worldviews, identities, interests, and values collide."
>
> (Crane *et al.*, 2014 p.136)

Where Ghoshal and Moran (1996) call for an organisational economy theory reflecting how firms lever human ability to co-operate and innovative, Crane et al (2014) call from a more encompassing view of social reality and re-conception of the role of firms in addressing major social injustices and environmental crises.

B.1.2 SCM definition and responsibility

There have been attempts to establish a SCM definition (Mentzer et al., 2001; Stock and Boyer, 2009), but no apparent consensus. Different understandings of what *constitutes* a supply chain is a contributing factor. That is, from the perspective of a focal organisation, is a supply chain all upstream inbound processes? Does the supply chain include internal transformation processes and extend to outbound down-stream processes? Where does the supply chain start and end?

Mentzer et al (2001) categorized a sample of definitions as being either a management philosophy, or implementation of a management philosophy, or a set of management processes. Based on their review of the literature, it was suggested definitions were confusing for academia and practice and were seeking to define two concepts. Thereafter, the following definition was developed for SCM accompanied by a model emphasising SCM as distinct from an organisation recognising the implications of supply chains (antecedent) and also distinct from the consequences of SCM:

> "The systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole." (Mentzer *et al.*, 2001 p.18)

Stock and Boyer (2009) proposed the following definition as a consolidation of collective wisdom and perspectives:

> "The management of a network of relationships within a firm and between interdependent organizations and business units consisting of material suppliers, purchasing, production facilities, logistics, marketing, and related systems that facilitate the forward and reverse flow of materials, services, finances and information from the original producer to final customer with the benefits of adding value, maximizing profitability through efficiencies, and achieving customer satisfaction." (Stock and Boyer, 2009 p.706)

This definition characterizes SCM first, as embracing a fully extended process from product / service origins through to end customer corresponding in Mentzer's terminology is the "ultimate supply chain" (Mentzer *et al.*, 2001 p.4).

Notably first, services are explicitly recognised, marking an increased focus on the value of services purchased and sold (Cohen, Agrawal and Agrawal, 2006; Ellram, Tate and Billington, 2007; Gulati and Kletter, 2005). Second, that SCM goals are consistent with recognised organisation goals but relate to the whole supply chain. Third, the role of SCM as being the management of all contributing *relationships* and *systems* that support efficient process flows to obtain these goals through *networks* of inter-dependent organisations, dispelling notions of simple linear relationships and flows (Autry and Griffis, 2008; Choi and Krause, 2006; Christopher, 2011; Gulati and Kletter, 2005; Pillai, 2006; Zaheer, Gözübüyük and Milanov, 2010).

B.1.3 Nature of supply chains

The first indication of complexity of supply chains is the sheer numbers and types of member organisations constituting modern supply networks, and the various relationships between member organisations (Choi and Krause, 2006). An economic-sociological perspective further denotes complexity by implicating human ideals (not merely economic goals), individual mental models, and cognitive features such as emotions and emotional intelligence within supply networks (Van Hoek, Chatham and Wilding, 2002; Mandják and Szántó, 2010; Wilding, 2008). Correspondingly, embracing the value of social capital from a connectionist perspective (pipe / flow), that is access to desired resources via human social relationships, and/or from a structural perspective (girders / position), that is network structural features such as density and strength of relationships or conversely absence and weakness of relationships (Autry and Griffis, 2008; Borgatti and Foster, 2003; Borgatti and Li, 2009), renders structures and relationships constituting supply networks inherently complicated, even from a relatively *static* perspective.

Complexity is further clear from the vision and work of Forrester (Forrester, 1958) in identifying significant system dynamic effects caused by inter-relationships between flows of information, material, money, manpower, and capital equipment across supply chains due to positive feedback, that is information feedback causing unplanned amplifications in system behaviour. This initial work spawned research focusing on how to explain, model and manage the dynamics of supply systems at various levels of analysis from urban communities to industrial supply chains through to national economies (Carlsson, 2016; Forrester, 2007; Wilding, 1998).

Relatedly, whilst supply chain management may imply that supply networks can be managed deterministically, it is argued that supply networks are instead complex adaptive systems (CAS) that cannot be fully predicted, or controlled (Choi, Dooley and Rungtusanatham, 2001; Pathak et al., 2007). Supply networks are not deliberately controlled by any single agent rather characterized by self-organisation and emergence by participating agents (individuals, groups,

organisations) each navigating dynamic, partially obscured, and difficult environments (markets, and broader systems e.g., cultural) towards obtaining selected goals. Supply networks co-evolve with their environments in a non-linear dynamic manner whilst exhibiting behaviour patterns.

An important feature of a supply network performance is thereby some ability to react but equally create its environment (Choi, Dooley and Rungtusanatham, 2001). In this respect more recently it is advocated that a focal supply network *and* its relevant environment be considered as a CAS, with emphasis on agent interpretation and enactment with its relevant environment (Nair and Reed-Tsochas, 2019). It is further advocated that schema, referring to norms, values, and assumptions held by organisations are composed of both micro-level schema (organisation) and schema emerging at the CAS, meso-level (supply network). Evolution of the macro-level economic system is not an aggregate of the behaviour of micro-level organisation agents rather captures the meso-level as a whole. Correspondingly, a meso-level CAS cannot be reduced to its micro-level agents and the macro-level only offers a perspective of meso-level changes (Nair and Reed-Tsochas, 2019).

B.1.4 SCM strategies and paradigms

Most notably *lean* supply or just-in-time (JIT) focused on waste elimination (Womack, Jones and Roos, 1990) but with calls to ensure avoiding mere re-allocation of waste elsewhere in the supply system and appropriately manage social consequences (Christopher, 2011; Hall, 1989; Peters and Jill Austin, 1995). Where a lean perspective emphasises waste, a *theory of constraints* perspective (Goldratt and Cox, 1989; Naor, Bernardes and Coman, 2013) emphasises throughput as a strategy. This approach is directed towards elimination of bottlenecks to balance overall process flow and gear the system towards *total lead time* reduction and thereby overall speed or rather *velocity* signifying direction and effectiveness (Christopher and Braithwaite, 1989; Gattorna, Chorn and Day, 1991; Gupta and Snyder, 2009; Humphries and Wilding, 2003). Notwithstanding benefits of leanness and velocity, to compete in dynamic and demanding market environments, focus on *agility*, that concerns responsiveness and flexibility, is also advocated (Christopher, 2011; Rimienė, 2011; Smart et al., 2003; Yusuf, Sarhadi and Gunasekaran, 1999).

Furthermore, attention is drawn to how any supply chain strategy must deal with the unpredictable nature of organisations and the broader environment (social and natural), whereby performance *reliability* through risk management, that is mitigating hazards or threats to the extent possible is invariably important (Christopher, 2011; Peck, 2006; Smart et al., 2003). In addition, given not all risks are avoidable, supply chain *resilience*, that is "the ability of the system to return to its original or desired state after being disturbed" (Peck, 2006 p.132) has become a further strategic concern (Christopher, 2011; Peck, 2006).

Leadership is promoted as central to performance and foremost requires determining which organisation(s) is (are) best positioned to lead supply chain endeavours in establishing effective governance structures and leadership styles (Defee, Stank and Esper, 2010; Fawcett et al., 2006; Mokhtar et al., 2019), thereafter to determine which process design to orient a supply chain towards, (leanness, velocity, agility, reliability, resilience) and to what extent (Choi, Rogers and Vakil, 2020; Christopher, 2011; Cox, 1999; Wong et al., 2012). Consistent or

25

complementary strategies between supply chain members towards shared goals is thus posited by some scholars as a prerequisite to firm and supply chain performance requiring greater commitment and co-operation between members (Christopher, 2011; Defee, Stank and Esper, 2010; Defee and Stank, 2005; Fawcett et al., 2006; Lambert, D. M., 2008; Wilding, 2008; Wong et al., 2012).

Nonetheless highlighted is that a dominant network member may privilege own firm interests over the interests of other members (Cox, 1999; Defee and Stank, 2005). Inherent tensions between firm versus supply chain interests cannot be ignored; the *fundamental* raison d'être of firms is value appropriation (Cox, 1999; Nalebuff and Brandenburger, 1997). Expressed differently, firms and supply chains face the challenge of creating shareholder value and customer value, and the relationship between the two is not straight forward. One may beget the other, but one can equally destroy the other unless the right balance under prevailing market and supply chain conditions is achieved (Cox et al., 2005; Wong et al., 2012).

Furthermore, that firms serve multiple supply chains points to embracing supply networks rather as a nexus of relationships (Autry and Griffis, 2008; Zaheer, Gözübüyük and Milanov, 2010) adapting to different supply chain forms, behaviours, and often conflicting demands (De Carvalho et al., 2016; Cox et al., 2005; Cox and Chicksand, 2005; Nalebuff and Brandenburger, 1997; Sinha, Whitman and Malzahn, 2004). Following a view that customer value should always take precedent (Gattorna, Chorn and Day, 1991; Wong et al., 2012) yet that it is unrealistic to expect firms to naturally align goals and behaviours, one advocated solution is optimisation of *natural flows* across the supply chain through reducing complexity (Christopher and Braithwaite, 1989; Gattorna, Chorn and Day, 1991; Goldratt and Cox, 1989). Introducing *adaptors* into supply systems such as third party logistics services to bridge differential goals and behaviours is one recognised approach (Christopher, 2011; Ellram and Cooper, 1990; Gattorna, Chorn and Day, 1991).

B.2 Inter-Organisation Relationships (IOR) debates

B.2.1 Theoretical landscape – Agency Theory

The theory highlights two distinct governance approaches that a principal might take to secure correct behaviour of the agent that is through monitoring behaviour or basing the contract on achieving prescribed outcomes. The former is deemed most efficient when the principal has complete information on the behaviour of the agent, otherwise an outcome-based contract is preferable to guard against an agent who despite claiming capability to fulfil the required task cannot (misrepresentation) or simply elects not to (shirking), referred to as moral hazard. As outcome uncertainty increases due to complexity of the work or possible impact from environmental factors, it remains preferable for the principal to contract on a behaviour basis, given the cost of transferring risk to the agent.

In the principal-agent approach assumptions relate to comparative risk adversity, level of goal conflict, possibility of monitoring behaviour (behaviour can be prescribed in advance) and similarly ability to measure outcomes being relaxed, and longevity of a relationship may also be considered. This yields further testable propositions for optimum contracting approaches (Eisenhardt, 1989). Notwithstanding, the extended propositions specify directional relationships alone such as "the risk aversion of an agent is positively related to behaviour-based contacts and negatively related to outcome-based contracts" (Eisenhardt, 1989 p.62). There are no specific thresholds, and it remains an empirical question as to what such thresholds are under what conditions. Furthermore, as the scope and complexity of delegated work increases and multiple goals are at stake, predicting the optimum governance approach becomes increasingly difficult (Eisenhardt, 1989).

It was therefore suggested agency theory be used in research first to focus on three variables, information systems, that alleviate information asymmetry and facilitate behaviour monitoring, outcome uncertainty, and risk, that distinguish the theory from other organisational theories. Second, to apply the theory to contexts where contracting problems are clear, such as where high levels of goal conflict exist. Third, to recognise a contracting continuum between behaviour and

outcome rather than a simple dichotomy (either-or) and consider multiple and mixed (behaviour and outcome) rewards. Fourth, recognising perspective limitations of the theory employ other theories in combination to broaden the perspective adopted. Lastly, to deploy agency theory in empirical work rather than seek to further theorise an already advanced theory (Eisenhardt, 1989).

More recently, a further review of the theory points to limitations notably centred around assumptions, where for example agents may or may be more risk averse than the principle and the principle is equally capable of exploiting the agent, thereafter emphasises perspective in how the agency problem is not limited to principle-agent relationships, but other relationship types for example principle-creditor, principle-principle, and agent-agent (Panda and Leepsa, 2017).

B.2.2 Theoretical landscape – Trust-Commitment Theory

In detail the model posits first, that trust is a determinant of commitment but not that commitment determines trust, second, five important precursors or conditions to achieving commitment and/or trust and one antecedent conversely held to hinder fostering trust, and third, six specific positive relationship outcomes.

Although the model provided a definition of *trust* implicating reliability and integrity, trust has been deemed a complex concept carrying a range of views on *what trust is*. Blois (1999) argued that clarification on significant features of the concept was necessary for research based on trust to offer real benefit suggesting "dependable goodwill as distinct from reliance" (Blois, 1999 p.200) better captured its essence, and this rarely existed in respect of all aspects of another's behaviour. It is argued that in research, its use requires specifying whom is trusted and what is being entrusted, due consideration that trust is not of necessity reciprocated, and recognition that trust is distinct from trustworthiness (Blois, 1999). Attention is also sharply drawn to how trust being affective based cannot be directly attributed to an organisation yet consistently the assumption that organisations can trust had been adopted unquestioned. Obligations of another organisation especially legally binding and reputation for *trustworthiness*, is argued possibly the closest related condition to *organisation trust* but its meaning including the role of reputation must thus also be addressed and whether trust or trustworthiness can be generated (Blois, 1999).

It is acknowledged that commitment is also variably conceptualised (Gundlach, Achrol and Mentzer, 1995; Morgan and Hunt, 1994) but that three core components appear dominant (Gundlach, Achrol and Mentzer, 1995). Consistent with Morgan and Hunt (1994) there is an instrumental and attitudinal component. Instrumental, relates to a calculated action taken to create a self-interest stake in the relationship for example asset investments. Attitudinal, is the presence of an affective intention to maintain an enduring relationship through future instrumental commitments. The third component adds temporality, signifying that relationship longevity entails consistency in instrumental and attitudinal components over time.

Focusing on the structure of commitment, the central argument is that credible *ongoing equitable* commitment (instrumental and affective) by both parties leads to development of relational social norms as shared behavioural expectations, and *both*, commitment and shared norms, are key to maintaining long-term commitment (Gundlach, Achrol and Mentzer, 1995). Where trust may not be reciprocal and need not be reciprocal (Blois, 1999) the opposite is held to be the case for commitment. If there is asymmetry in commitment the more invested party is held more vulnerable to opportunism by the less committed party although the propensity of such behaviour may be subject to other safeguards (Gundlach, Achrol and Mentzer, 1995). This being the case trust and commitment each carry potential benefits and liabilities but that trustworthiness and commitment attributed to another party by a party enables the latter to tolerate uncertainty about future events (Blois, 1999; Gundlach, Achrol and Mentzer, 1995).

In addition there are challenges to the directionality of the trust-commitment relationship (Brown, Crosno and Tong, 2019; Paluri and Mishal, 2020). Recent empirical analysis reveals that trust may not necessarily be positively related to commitment. Importantly also that commitment can undermine or reduce trust (Brown, Crosno and Tong, 2019). In summary, reasons for a negative relationship between commitment and trust are posited to relate to vulnerability and perceived opportunity costs leading to a questioning of partner motives or a desire to seek alternative relationships, signifying loss of trust. According with Gundlach et al (1995), the impact may nevertheless be mediated by commitment symmetry. It is also possible that a negative relationship relates to instrumental commitment alone through a sense of being locked-in to the relationship, whilst affective commitment and trust may continue to re-enforce over time. To some extent the questioned relationship between trust and commitment is discernible from the work of Gundlach et al (1995), whereby it is *ongoing* commitment investment that supports maintaining clear relationship benefits, and pre-empting opportunism (Brown, Crosno and Tong, 2019).

A recent systematic review of research conducted on commitment and trust in supply chains from 1990 to 2019 (Paluri and Mishal, 2020) further indicates a lack of consistency in how trust and commitment are conceived. Reportedly, 15 definitions of trust and 9 definitions of commitment are in use. The review further assimilates 40 antecedents and 39 consequences of trust and 11 antecedents and 15 consequences of commitment displaying overlaps on antecedents and consequences implicating feedback. Commitment is also held to determine trust thereby further challenging directionality of the trust-commitment relationship.

B.2.3 Theoretical landscape – Power-Conflict Theory

It is found accepted by some scholars that debates on meaning are irresolvable, and power definitions employed must therefore always be stated:

> "Including power in any framework, however, is not without its challenges. This is not least because power is one of the most contested concepts in the social sciences. It is not simply that both its meaning and its application are in dispute, but also that the nature of this dispute is such as to be fundamentally irresolvable… once famously described as an essentially contested one (Gallie, 1955; 1956)… the lack of clarity over the meaning of power does make it necessary for the authors to specify their working definition."
> (Cox *et al.*, 2005 p.32)

A definition employed drawn from the power literature is qualified to refer to *social* power and not *outcome* power as "the ability of one party to adversely affect the interests of a second" (Cox *et al.*, 2005 p.33). In the context of IORs, interests are held to be in maximising gains from trade or surplus value, that is the difference between the utility benefit a buyer obtains from purchasing goods and the cost of producing goods by the supplier. Framed in economic terms, IOR-power is thus embraced as an *ability* to reduce gains of the other party and appropriate greater value from trade. This includes collaborative relationships whether surplus value be generated through reducing costs of production or increasing utility of the goods produced (Cox et al., 2005).

Following Emerson (1962) and Salancik and Pfeffer (1974), power (social) is further deemed to be derived from structural dependence, as a function of motivational investment in the exchange and alternative opportunities for exchange from other parties (Cox et al., 2005). Power might also arise from information asymmetry especially surrounding motives and possible future actions whereby one party *abuses* private information in exchanges leading to the other party not knowing its objective interests (Cox et al., 2005). In other words, misrepresentation, generating adverse selection pre-contract and moral hazard post contract, noted in agency theory (Eisenhardt, 1989) and applicable to both parties (Panda and Leepsa, 2017).

Thus, from a *firm* perspective, economic reality is that wherever possible power be used effectively in the self-interest of the firm and over the interests of others (Cox, 1999). Exchanges entail inherent conflict of interests but does not preclude shared goals such as increasing surplus value however imbalanced appropriation may be. Each firm normatively negotiates its position and determines whether an exchange is worthwhile and is why power is a key element in determining the requisite level of collaboration including investments given such investments may create both mutual lock-in and asymmetrical lock-in, radically altering the power of collaborating firms and value appropriation (Cox et al., 2004).

In contrast, McDonald (1999) advocated seeking power symmetry to preserve relationship harmony aligning with the rationale for commitment symmetry (Gundlach, Achrol and Mentzer, 1995).

Notwithstanding, a multi-theoretical (sociological, psychological, managerial) evaluation of power concluded a lack of consistency in power definitions existed (Belaya and Hanf, 2009). Further confirmed is disaccord in the role power plays in society broadly and specifically in IORs. Contradicting the alleged accepted view of power as positively related to conflict (Morgan and Hunt, 1994) is how non-coercive power is power and can accomplish desired outcomes and improve effectiveness of group work. The authors conclude there may be both positive and negative consequences of power and that emphasis on coercive power, largely found in economic based theories of power, ignores the important role of non-coercive power especially in collaborative relationships. Power conceptualisation is found under-developed, hindering power studies in the supply chain context (Belaya, Gagalyuk and Hanf, 2009). Notably, a consensual-coercive power continuum is moreover argued by both Haugaard (2002b) and Simon and Oakes (2006).

Turning to classic conflict theories, these focused on approaches to conflict resolution from different perspectives. Adopted perspectives included how *individual characteristics* such as gender and age are relevant to conflict resolution, the nature of the *social process* in terms of human interactions in resolving conflicts, the very *structure of society* in how it may create and resolve

conflicts, and from a *logical and mathematical* explanatory perspective (Schellenberg, 1996). Five main approaches to conflict resolution in practice are recognised, coercion (by force), negotiation (voluntary agreement), adjudication (authority based), mediation (third party assistance), and arbitration (third party decision) (Schellenberg, 1996). Ethical leadership was also viewed as an approach, especially in cultures where reputation for ethical behaviour is considered important (Mo, Booth and Wang, 2012). These approaches may be contrasted with conflict handling styles identified such as avoid, oblige, accommodate, integrate, and compromise that are related to concern for self, versus concern for others (Rahim, 1983).

A recent review of the organisational conflict literature concludes that greater emphasis overall has been accorded to examining conflict and its resolution at the individual level within teams, in comparison to conflict between IORs that has received relatively little attention (Lumineau, Eckerd and Handley, 2015). The authors noted several connections but marked differences between the nature of conflict at an inter-personal level versus IOR level, for example respectively in terms of governance mechanisms (connection) being more informal *versus* formal, motivations (connection) being similarly individual versus some mix, and the impact (connection) being cognitive and affective not merely behaviour versus exchange behaviour. To embrace IOR conflict it was argued required a comprehensive and cohesive understanding of the antecedents, forms, management strategies, consequences, and moderating factors from a multi-levelled perspective incorporating individual and organisation level factors (Lumineau, Eckerd and Handley, 2015).

Developing such a comprehensive perspective was nonetheless recognised to be complicated by the fact that individual interests may differ from organisation interests and individuals responsible for IOR management often change over the duration of an IOR and continuity may be lost (Lumineau, Eckerd and Handley, 2015). A range of what, who, why, how, where, and when questions were developed related to *what IOR conflict is* and how to discriminate IOR conflict from other IOR constructs. The following two perspectives (Sword, 2008; Vickers,

1972) however suggested the answers to the questions raised by Lumineau et al (2015), including *why* do conflicts occur ultimately would be subject to context.

Vickers (1972) argued first, that conflict was ambiguous for it refers to deciding between alternatives and also to hostilities among parties when such decisions are found unacceptable. At what point conflict in terms of alternatives becomes hostile depends on what is held to be acceptable. The distinction drawn here was interpreted to align to the distinction drawn between functional (alternatives) and relationship (hostile) conflict (Morgan and Hunt, 1994). Viewing sources of conflict to include competition for scarce resources and constraints imposed by demands and expectations of others, but that both emanate more fundamentally from individual conflicting fears, aspirations, and expectations of the self *in* different contexts, it follows that what will be a conflict in each context and what will constitute an acceptable resolution depends on the very personalities of individuals concerned:

> "What we can and cannot do, must and must not do, ought and ought not to do are defined by the constraints imposed on us by circumstances, by other people and by ourselves. Each of these constraints can raise conflicts. Each conflicts with the others. And any or all of them may conflict with that simpler category, what we want and do not want to do."
>
> (Vickers, 1972 p.130)

Second, conflict was held to arise at different levels and takes different forms. Conflict can arise at the individual level within or apart from legal and social limits, across organisations, through to governments. Where authority is involved, conflict takes place within established rules or concerns changing the rules and is further subject to legal, constitutional, and conventional rules. Types of conflict occur together concerning what the situation is, what the outcome should be, based on what criteria and relative importance of criteria. Thus, models conceiving conflict as some mechanistic resultant of forces at play, or even models taking a game play form, are too simplistic. It is the very rules of the game that generate major conflicts and communication serves a vital role in *human* conflict (Vickers, 1972).

Third, that individuals are objectively and subjectively affiliated to various systems not least professions, organisations, religions, and race, with competing demands. It was suggested conflict resolution thus depends heavily on preserving loyalty and mutual trust towards the various systems to avoid polarisation of conflict. If polarisation occurs, the parties are subjectively and then objectively the furthest apart possible to resolve the conflict at hand and become devoid of the loyalty and trust needed for acceptable resolution and resort to total separation from or even destruction of the other party. Individuals, it is espoused, not merely system authorities, have responsibility to face and constrain conflict at the level it arises (Vickers, 1972), corresponding with the need to better understand conflict through the mental maps formed by individuals in practice and rather in terms of how to maintain coherence under change (Sword, 2008).

Classic conflict theory (approaches and styles) and conflict in practice are thus held to be very different (Sword, 2008; Vickers, 1972). Sword (2008) first argues complexity theory offers an important lens to better explain conflict in recognising how it is mental analysis in situ continuously forming mental conflict maps that drives behaviour, that is meanings and understanding of the conflict faced however incomplete or inaccurate, whereby conflict and change move forward in some manner together. Second, a complexity perspective further directs attention towards how outcomes difficult to predict are addressed or levered (complex adaptive system), and how powers of Nature (complexity theory) may be used to offset traditional power imbalance (authority). Conflict is not predictable rather emerges from behaviours of many parties and it is important to understand how individuals adapt and learn (feedback) and how their contributions intended or otherwise may amplify or dampen conflict (emergence). Such understanding it was argued extends beyond classic conflict theory that according with Vickers (1972) over-simplifies the realities of conflict (Sword, 2008).

B.2.4 Partnership performance

Both power and conflict are inextricably linked to commitment-trust aspects of IORs, thereafter contributing factors in determining optimum governance structures (agency theory), but precisely in what manner highly debatable. The complex interrelations between not least these five phenomena but many other related phenomena such as goal setting, commitment and motivation (Locke, 1978; Locke, Latham and Erez, 1988; Locke and Latham, 2004), and culture (Hofstede, 1980), how to improve partnership performance appears a minefield.

Various scholars emphasise the need for a clear rationale for strengthening a relationship offering frameworks to guide selection of partners, typically based on two primary evaluation criteria, simple or compound (Brotspies and Weinstein, 2019; Day, Magnan and Moeller, 2010; Dyer, Cho and Chu, 1998; Lambert, Emmelhainz and Gardner, 1996; Nenonen and Storbacka, 2016; Spekman, Kamauff Jr and Myhr, 1998). Examples included, value potential *versus* product complexity, relative cost *versus* risk of exposure, collaboration *versus* technology (Day, Magnan and Moeller, 2010), economic profit *versus* strategic fit, or simply lifetime value (Nenonen and Storbacka, 2016). Frameworks of this type however lack guidance on how to evaluate, implement, and continuously develop partnerships (Lambert, Emmelhainz and Gardner, 1996).

Some empirical studies offer insights to why partnerships have failed to deliver expected outcomes. Two studies are multi-industry based exploring a range of practices (Ellram, 1995; Spekman, Kamauff Jr and Myhr, 1998). Two further studies are industry specific, the first focusing on trust and C3 behaviour (co-operation, co-ordination, collaboration) in monopolistic relationships largely free from horizontal competitive forces (Humphries and Wilding, 2004) and the second, on the link between strategic relationships and operational realities (Fugate, Davis-Sramek and Goldsby, 2009). The main reasons cited for failure aligned to partnership facilitators and components as depicted in Table B-1. The lack of relational components trust, communication, and C3 behaviour thereafter, lack of shared goals, disconnects between strategic intent and operational behaviour, and poor upfront planning, reportedly contribute to poor performance.

Source	Main Failure Reason	Model Correlation	Nature
Ellram (1995) Humphries and Wilding (2004)	Lack of Trust	Component	Relational
	Poor communication	Component	Relational
Humphries and Wilding (2004)	Lack of C3 behaviour	Component	Relational
Ellram (1995)	Lack of top management support	Facilitator	Process Relational
Ellram (1995) Spekman et al (1998)	Lack of shared goals	Facilitator	Relational
Ellram (1995)	Poor up front planning	Component	Process
Ellram (1995)	Lack of supplier total quality commitment	Component	Process Relational
Ellram (1995)	Lack of relationship strategic direction	Facilitator	Relational
Fugate et al (2009) Spekman et al (1998)	Operationalisation of strategic relationship: (1) daily tactical activities *required* to support strategic goals (2) buyers retaining traditional behaviours with lack of buy-in to SCM paradigm	Component	Process Relational

Table B-1. Main reasons for poor partnership performance

The failure assessment criteria employed to assess partnership performance is nonetheless salient. A review of an engine manufacturer alliance was held to exemplify how despite cessation that may indicate failure, the alliance had been a strategic success given benefits parties derived from the alliance and environmental factors (Smith, 2003).

B.3 Commercial aerospace industry debates

Industry reports on evolution in the industry mirror the SCM and IOR literature. From lead manufacturer *strategies* to access the more lucrative aftermarket entailing *levering position* in the aircraft supply chain to offer total airline solutions (Feldman, 2001; Nelms, 2000) to strategies to combat obsolescence, complex demand forecasting, and parts traceability (Ferry, 2005; Phillips, 2004). From distributing *risk* across supply chains by *outsourcing* larger integrated work packages to bigger supply partners whilst protecting knowledge assets (Beauclair, 2007; Enders, 2009; Jackman and Tegtmeier, 2008; Jordon and Lowe, 2004; Smock, 2009; Sutton and Cook, 2001) to developing *virtual organisations* or acquiring or divesting organisations to deliver solutions efficiently and globally over the service life-time (> 20 years) of aircraft (Mecham, Jackman and Anselmo, 2006; Nelms, 2000; Sparaco, 2009). From developing supply chain *relationship management* forums to reach across the *value chain* to exploiting synergies across supply chains (Hoyle, 2008; Jackman and Tegtmeier, 2008; SC21, 2021; Sutton and Cook, 2001).

Topical debates concerning supply chain performance (SLR1), first centred on whether organisations and supply chains have the basic *capabilities* to meet the challenges faced. In particular, whether aircraft manufacturers geared to *lean* practices understood the *agility* necessary to serve airline demands (Feldman, 2001). Second, programme management including strong *leadership skills* were argued to be lacking yet vital to achieve *resilience* when pushing the boundaries of aircraft technology on development programmes through *complex supply networks* (Bruno, 2009; Editorial, 2009). Third, despite a trend towards closer *collaboration*, partnerships had ended and deemed to have *failed* (Hoyle, 2008; Velocci, 2001) albeit sometimes debatable (Smith, 2003). Systemic *communication* issues (Smock, 2009), and *cultural* differences across organisations (Velocci, 2001) were posited causal factors.

The power debate (Enders, 2009; Sparaco, 2009) serving as the driving force behind the research is connected to reported evolutions and performance issues.

B.4 Power literature

B.4.1 Development

Important roots of modern power conceptualisations are viewed to lie in the works of two early modern political theorists, Machiavelli's *The Prince* (1517); and Hobbes' *Leviathan* (1660). Where Hobbes conceived power "as identical to cause" (Clegg, 1989 p.26) and sought to theorise how society should organise itself to safeguard man's existence in the face of Nature, Machiavelli conceived power in terms of "strategies" and "games" (Clegg, 1989 p.31) to acquire power, and sought to uncover the rules of the game. Although, Hobbes' and Machiavelli's ideas of what power is and does respectively are deemed "philosophers' metaphors" (Clegg, 1989 p.39), such ideas shaped political and sociological conceptualisations of power (Clegg, 1989; Haugaard, 2002a).

In the mid-twentieth century Hobbes' conception of power was the dominant paradigm attributed to its accordance with the modernist spirit and positivist philosophical stance that power was "something directly observable and measurable" (Clegg, 1989 p.4). Corresponding evolution in modern conceptions of power have been traced from Dahl's (1957) episodic direct causal relationship between two agents where an agent is able to get another agent to do something he would otherwise not do, referred to as "the first face of power", to the work of Bachrach and Baratz (1962) in identifying manipulation of agendas as an indirect means of behavioural influence and "the second face of power", through to the "third face of power" identified by Lukes (2005, first published 1974) where behaviour is effectively controlled through changing others' interests to be aligned to one's own (Clegg, 1989; Haugaard, 2002a; Simon and Oakes, 2006).

Machiavelli's "imprecise, contingent, strategic and organisational" (Clegg, 1989 p.4) conceptions of power centred around domination nonetheless gained momentum through the works of eminent scholars such as Bourdieu and Foucault by the late twentieth century (Clegg, 1989; Haugaard, 2002a).

B.4.2 Contestations

The concept power, progressively carried a legacy of unresolved challenges, not least regarding: (1) the adequacy of the concept of *causality* (Bachrach and Baratz, 1962; Dahl, 2002; Harré and Madden, 1975; Lukes, 2005); (2) validity of *assumptions* about the nature of human beings as subjects and relatedly the relationship between human agency and social structures (Bourdieu, 1989; Foucault, 1982, 1995; Giddens, 2002); (3) the *difference* between power and influence (Lasswell and Kaplan, 1950; Lukes, 2005; Morriss, 2002; Weber, 1947); (4) the *objectivity* and *rationality* of power (Dahl, 2002; Flyvbjerg, 2003; Foucault, 1982, 2005; Giddens, 2002; Poulantzas, 2002); (5) the role of *intentions* and *volition* (Dahl, 1957; Morriss, 2002; Russell, 2004; Weber, 1947); (6) the role of *resistance* and relatedly the relevance of *consensus* versus *conflict* (Barnes, 2002; Foucault, 1982; Lukes, 2005; Parsons, 1963; Weber, 1947); (7) proving a *hidden* power and determining *real* interests (Benton, 1981; Lukes, 2005); and (8) whether, as a set of capabilities or capacities, power is thereby *dispositional* or moreover a system of polity comparable with money and thereby *facilitative* rather than *episodic* (Barnes, 2002; Morriss, 2002; Parsons, 1963; Wrong, 1968).

A circuits of power framework (Clegg, 1989 p.187-240) with three distinctive, yet contingent *circuits* of power namely: episodic; dispositional; and facilitative, was positioned to connect the origins of power (Hobbes and Machiavelli) through modern and post-modern perspectives into a power analysis framework. This provided a high-level analytical framework directed towards organisations and modern states but did not appear to directly *resolve* all fundamental debates such as, whether power is confined to obtaining *intended* outcomes in the episodic circuit? (Lukes, 2005; Morriss, 2002) and whether episodic agency concerns conflict and consensus in goals and structure? (Haugaard, 2002b).

In addition, social relations were held to exist from which human agency springs, but the framework did not fully account for how agency emerges. For example, from a socio-*psychological* perspective, following Morriss, where power is about effecting outcomes (power-to), not merely affecting others (power-over), it is argued that identity, as the meaning of the self in the world from which interests,

goals, and values flow, provides the most efficient basis of power (Simon and Oakes, 2006). Through *shared* identity, it is possible to recruit agency of *willing* others to obtain desired outcomes without recourse to coercion or the costs of punishment or reward. In this sense power is consensual involving the re-convergence of power and influence (Simon and Oakes, 2006). The ability to manipulate identity rather than interests, provided an important "fourth face of power" (Simon and Oakes, 2006, p. 119) and following Haugaard, power is not restricted to being a conflict based phenomenon rather sits somewhere on a conflict-consensus scalar continuum.

Rudimentary to all these debates however lingers whether the concept power is essentially contested whereby power is ontologically real and meaningful but epistemically disputed (Lukes, 2005), or, following Wittgenstein, that the concept power is a family resemblance word, like game, having no single common essence, rendering the search for a single concept illusory. That power be held a family resemblance concept pointed to understanding conceptual breadth in the power literature.

B.4.3 Conceptual breadth

The power literature embraced social, political, and psychological perspectives linked to economic systems of production and legal/political systems of discipline. There is formal recognition of the power of Nature, of human physical power, and the power of human creations such as nuclear reactors or firearms, but generally, social science accounts exclude natural-based power other than accounting for its use as a threat (Haugaard, 2002a). Correspondingly, power is sometimes qualified as social or specifically political power and outcomes of power limited to social outcomes (Clegg, 1989; Haugaard, 2002a).

Notwithstanding, there are analogies drawn between, if not conceptions derived from, the natural sciences. Notably, Hobbes' conception of power is held to draw on the notion of mechanical forces and be analogous to a billiard ball hitting another contrasting with Clegg's electrical circuits that evokes the notion of electrical fields, fluxes, and flows. Both representations of power correspond with the most explicit connection made, that "the fundamental concept in social sciences is power, in the same sense in which Energy is the fundamental concept of physics" (Russell, 2004 p.4 first published 1938). Although conceptual links are evident, a comprehensive account of *why* distinctions are necessary are generally vague other than possibly a human's capacity to think rationally and knowledge (Barnes, 2002; Haugaard, 2002b). Moreover *how* such distinctions are reflected, varied (Haugaard, 2002a) and merited consideration of the conception of power in the natural science.

Natural power

In the natural sciences, power stands as a relatively robust and unchallenged concept, albeit often misunderstood, as the "rate at which work is done", where "energy is the capacity for doing work" and work is "the result of conversion [transfer] of energy from one form [system] to another" (Nailen, 1996 p.28) involving a physical natural *force* or *mechanism* and motion or change. Energy is a physical property of a *system* (physical substance and fields) and exists in two basic forms that is potential as in stored / inactive and not doing work or kinetic as in moving / active thereby doing work (Nailen, 1996; Swackhamer, 2005).

There are various ways energy is stored in the natural world of which humans are a part. It is why although there is only one kind of energy, energy is generally referred to as existing in different forms based on the type of system in which it is stored, notably mechanical, electrical, chemical, nuclear, thermal, and electro-magnetic, and that energy may be transformed (strictly transferred) from one system to another in doing work that entails a change in both systems. This is evident in the functioning of a car, where chemical energy stored in a car battery, transfers to electrical energy that amongst other things is drawn upon to ignite fuel in the engine motor releasing stored chemical energy as thermal energy (heat and pressure) that is transferred to pistons as mechanical kinetic energy in the movement of pistons that ultimately is transferred to the car wheels that causes the car to move (displacement). This is also evident in the human metabolic system where not least chemical energy is consumed through eating and drinking that when combined with oxygen in complex bio-chemical processes transfers energy to the body as stored chemical and thermal energy or directly transfers to electrical energy as signals to and from the brain to control muscles and organ function (Helmreich, 2013; McEwen, 2013; Melzer, 2011).

Furthermore, there are a range of associated concepts that explain natural power such as resistance, efficiency, usable energy, and importantly laws governing how energy, the core power concept, is stored and transferred. The most relevant law in seeking to draw comparisons and/or connections between natural and social power appeared to be how "energy can neither be created nor destroyed" (Nailen, 1996 p.30) otherwise known as the law of conservation of energy. If social power as noted involves such things as intentions and rational thinking associated with the mind but concerns human action, the mind-body or mind-brain relationship appeared crucial to accounts of social power. Yet there are unresolved debates found both in the philosophy of the mind (Collins, 1997, 2008; Gibb, 2010; Lowe, 2000; Pitts, 2020; Robinson, 2020), and in psychology and medicine (Barrett, 2009; Cacioppo and Decety, 2009; Miller, 2010) as to the relationship between the human mind and brain or body.

Mind-body relationship

Debates fundamentally circle around the ontological status of the human mind in relation to the brain (Lowe, 2000; Robinson, 2020). Foremost, in accepting (a) the mind as having no physical ontological status (no independent material substance) rather as embodied within the physical brain and (b) energy as a purely physical quantity, one argument is that all human physical behaviour is thus determined by brain physical functions (active neurons), leaving no apparent distinct causal role for the mind. The mind not being physical cannot store energy to transfer to the brain and the conservation of energy is upheld. The question remained however as to how to account for the relevance of the mind, not least human subjectivity, consciousness, and rational thought.

In complete opposition, idealists argue that all physical states are given by mental states in holding the whole world to be constructed by our minds. Energy like anything else is an intersubjective concept and a mental product devoid of natural laws including conservation of energy. Conservation of energy thus has no relevance. Other scholars however posit a dualism between the mind and brain where the mind and brain are held to be different kinds of things that cannot be reduced in either direction. For proponents of dualism, it remains highly relevant to consider how the mind and brain (or body) do interact. Three accounts of dualism have been postulated as follows (Robinson, 2020).

Dualism may be argued in terms of *predicate* dualism that is *function* where for example psychosis as a psychological state carries functional meaning beyond that which is given by any associated physical description of brain state and as such cannot be reduced to a brain state. Dualism is also claimed on the grounds of *property* dualism in that *consciousness* that is attributed to the mind, carries emergent qualitative properties of awareness and responsiveness that is more than the properties attributable to a brain state. A further form of dualism is *substance* dualism where a distinction is drawn between the material brain and body, and the immaterial person in human being, each having different identities. It was on dualistic accounts that the law of conservation of energy was problematic. In other words, how can a non-physical thing (mind) have the ability

to affect the energy and movement of the body, a physical system, and vice versa? If this is the case, does this entail generating and losing energy in the physical world contravening the physical law of conservation of energy? (Lowe, 2000; Robinson, 2020).

Some scholars seeking to maintain the integrity of the law of conservation of energy, postulate that mental events are merely caused by physical events and themselves do not affect physical events (epiphenomenalism) whilst others advocate that the realm of the mind and brain are separate rather move along together (parallelism), yet both explanations are considered weak, if not incredible (Robinson, 2020). The debates are more vehemently held around *how* to *explain* the interaction and its importance to behaviour and well-being and date back to Aristotle and Plato (Robinson, 2020).

Although reportedly no resolution has yet been reached, the notion of the mind as a non-material *field* of *psychological* forces at work (Lewin, 1938) enabling or constraining human awareness, meaning construction, reasoning, and responsiveness, that *somehow* are intermingled with brain *physical* forces at work nonetheless is suggested to offer a contemporary explanatory framework (Lowe, 2000; Rainio, 2009a, 2009b). Lewin's framework is posited to more align with quantum physics that recognises discrete *energy levels* of particles rather than a given particle having a specified amount of energy, where photons (part of electromagnetic waves) conceived as the smallest observable quantum of energy have no mass (material substance). The physical world based on quantum physics is conceived in terms of probabilistic *states* and behaviours corresponding with the indeterministic nature of the social world (Rainio, 2009a, 2009b) rather than deterministic as in classical physics. This begged the question as to whether under this common language of energy fields, forces, energy levels, indeterminacy, probabilities (Lowe, 2000; Rainio, 2009a, 2009b), greater alignment between conceptions of social and natural power was feasible?

Relatedly, eastern cultures consider the human body to consisti of two systems, the visible material system *and* the invisible energetic system believed to be the key to unlocking our understanding of well-being (Liu, 2018). Furthermore, more

recently the question has been asked as to "whether quantum theory can help us to understand consciousness" (Atmanspacher, 2020).

B.5 SLR methodology details

B.5.1 Panel members

Role		Person	University	Tenure
Panel Chair	Research SLR	Professor Clare Kelliher	Cranfield University	Duration
Panel Member Supervisor	Research SLR	Professor Richard Wilding	Cranfield University	Duration
Associate Supervisor	Research	Professor Michael Bourlakis	Cranfield University	Temporary
Panel Member	Research SLR	Professor Liz Varga	Cranfield University	Duration
Panel Member	Research SLR	Professor Mark Johnson	Cranfield University	Temporary
Panel Member	Research SLR	Associate Professor Marko Bastl	Cranfield University	Temporary
Panel Member	Research SLR	Professor Palie Smart	Cranfield University	Temporary
Systematic Review Methodology Support	SLR	Dr Colin Pilbeam	Cranfield University	SLR Duration
Library Support	SLR	Heather Woodfield	Cranfield University	SLR Duration

Table B-2. Research project and systematic literature review advisory panel

B.5.2 Relevancy criteria

No.	Primary sourced – ABI/Inform Data Base SEARCH		Secondary sourced – REFERENCED	
	INCLUSION Criteria	Rationale	INCLUSION Criteria	Rationale
R1	Peer reviewed academic journal articles registered in ABI/Inform data base	ABI/Inform advised to capture at least 80% of relevant journal articles. Despite use of search terms designed to efficiently isolate relevant studies on a replicable manner, given extensive usage of terms power and relationship in the literature, a potentially large volume of literature was anticipated to be initially identified. Multiple data base searches were considered unmanageable. Seeking to establish 50-60 quality studies representing core academic knowledge (core studies)	Academic accessible published studies including conference papers and specific studies published in books *referenced by* primary sourced *core* studies	Extends search beyond journal articles in ABI/Inform in part mitigating use of a single data base to source studies and enables determining conceptual origins. Enlarges scope of accessed and connected academic knowledge where quality assessment of all studies ensured relevancy and quality. **Note**: • *Preliminary core studies* were established based on title and abstract relevancy assessment (criteria R2 to R9) of primary sourced articles. • Referenced studies sourced were initially based on these preliminary core studies. • *Final core studies* were based on quality assessment of all preliminary core studies identified (primary and secondary).

Table B-3 *(Cont.)*

Primary AND Secondary Sourced Studies		
No.	**INCLUSION Criteria** **(Satisfies R2 and R3 and R4 or R5)**	**Rationale**
R2	Studies where the concept 'power' is central to the author(s)' intellectual project and relevant to answering the review question.	The purpose of the review was to answer the review questions with the best evidence available from academics purposefully engaging in studying IOR-power.
R3	Unit of analysis is inter-organisation dyadic relationships.	Scope of the review corresponding with focal context of interest.
R4	Study in English or French.	Inability to understand articles written in other languages.
R5	Power Origin studies is a specific inclusion criterion (See determination methodology Appendix B.5.6)	Answers sub-review question SLRQ 3 Understanding conceptual origins of power in focal context (IORs)
No.	**EXCLUSION Criteria** **(NOT satisfy R6 or R7 or R8 or R9)**	**Rationale**
R6	Literature addressing exclusively natural power.	Out of scope, focus of review is specifically inter-organisation power.
R7	Literature addressing exclusively concepts highly related to power but are different concepts namely control and influence.	Out of scope, focus of review is specifically power.
R8	Literature addressing exclusively consumer power.	Out of scope, focus of review is specifically power in inter-organisation relationships.
R9	Literature addressing exclusively power for a different unit of analysis or context	Out of scope, focus of review is specifically inter-organisation dyadic relationships.

Table B-3. Relevancy criteria applied to primary and secondary sourced literature

B.5.3 Quality assessment

Quality assessment or fitness for purpose in informing the literature review questions (SLRQ1 to SLRQ4) was based on assessing level of compliance (0 to 100%) to central questions asked of the study listed in Table B-4.

Study Inclusion / Exclusion Criteria	
Category	**Central questions**
Intellectual Project	The author's project directly informs the review questions?
	The project is clearly positioned in the extant body of literature?
Main Claim	The authors' claims and overall argument are clear, consistent, and robust?
	The degree of certainty and generalization of claims made is consistent with sources and limitations, including any biases?
Evidence	The range of sources is adequate?
	The authors research design is appropriate and robust?
	The author's methods and methodological approach are robust?
	The author's own research evidence is robust?
Theoretical Orientation	The theoretical orientation or conceptual framework is clear and consistent with the intellectual project?
	The key concepts underpinning any explicit or implicit theoretical orientation are clear and justified?
	Explicit or implicit assumptions are consistent with treatment of concepts and theoretical argument?
	The use of concepts is consistent and congruent with others' use of the same concepts or justifiably incongruent?
Value Stance	The author's implicit or explicit value stance does not affect the validity of claims made?
Support	Evidence from others' work supporting claims made is robust and clearly referenced?
	There is no robust evidence from others' work that invalidates the authors' claims?

Table B-4. Central quality questions asked of potential core studies

B.5.4 Primary analytical classification system

Analysis Categories		Basic Definition
SEARCH	**SLR1**	First systematic literature review (SLR1) search including referenced studies (SLR1 Ref.) *unique* to SLR1 = contributing to development of proposed theory
	SLR2	Second systematic literature review (SLR2) search including referenced studies (SLR2 Ref.) *unique* to SLR2 = contributing to validating proposed theory
	SLR 1&2	Search studies including referenced studies *common* to SLR1 and SLR2 = primarily contributing to development of proposed theory
SPECIFIC	**P Theory**	Theoretcal social power studies that are *not* context specific
	ORIGINS	Theoretical social power studies that are *not* context specific analysed to constitute meaningful orgins of power theory in the IOR context
	IO	Study of power in the IO context (level 0 or level 1)
LEVELS 0 to 6		**Study Purpose and Secondary Classification:** (Chapter 2, Section 2.4.2.2)
Contributory (Core literature)		All Level 0 studies AND all studies referenced by at least one Level 0 study (Included)
Non-Contributory (EX)		All Level 5 and Level 6 studies AND studies <u>not</u> referenced by at least one Level 0 (EX = Excluded)

Table B-5. Primary analytical classification system applied to sourced literature

Specific codes employed to enable filtering studies for analyses purposes such as study referencing levels are available in S-Appendix LR-1.

B.5.5 Secondary analytical categorisation system

The secondary categorisation system employed commenced with pre-determined categories thereafter was developed based on the literature sourced. Category definitions are listed in S-Appendix LR-1.
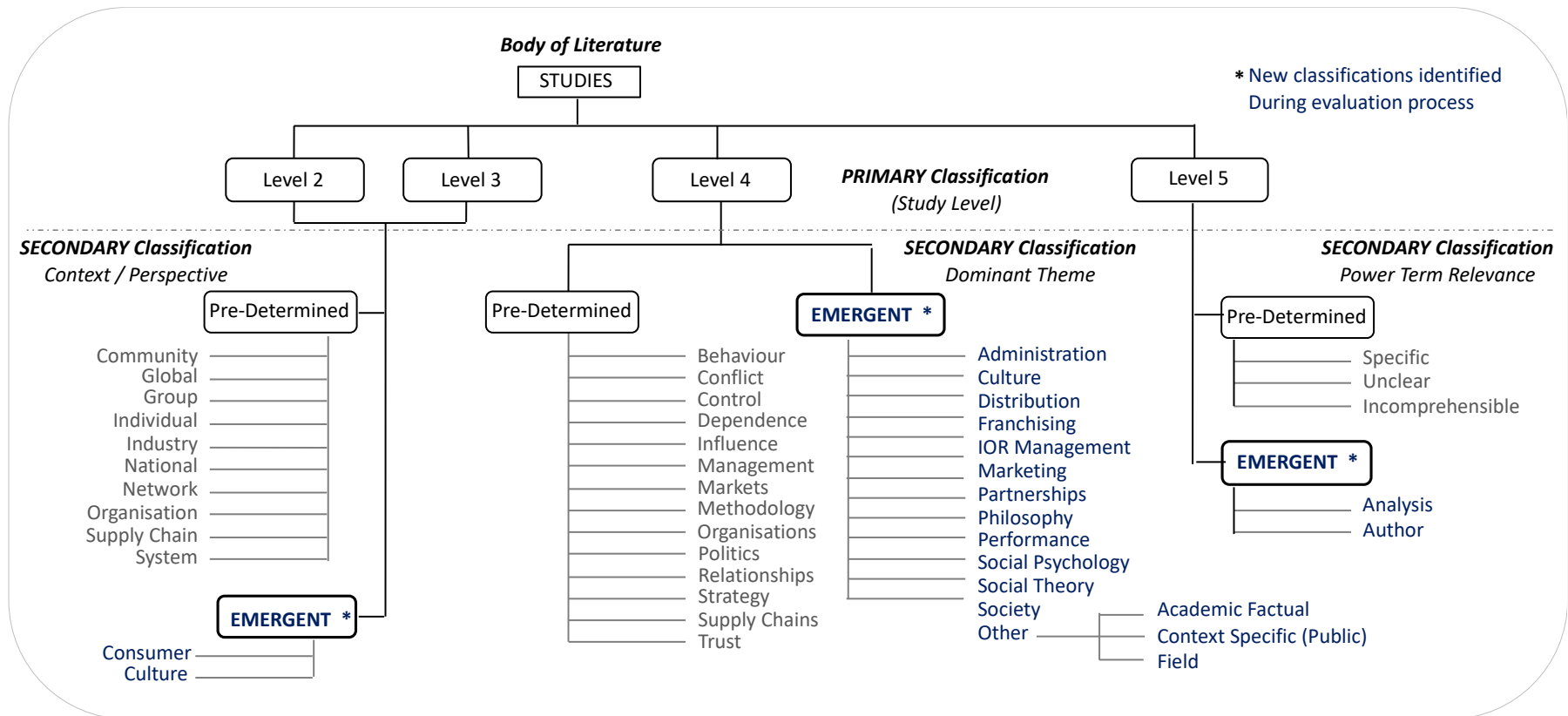
Figure B-1. Secondary categorisation system

B.5.6 Determining power origins

	Methodology	Base Description	Advantage	Disadvantage
1	**IOR Baseline**	Intelligent derivation from the first study of power in the IOR context based on significance of referenced power theory	• Represents significant point of departure in the IOR literature • Simple and focused	• Assumes absolute relevancy of first study to the IOR literature • May exclude more influential theory introduced by contemporary studies • Subject to interpretation of significance of referenced studies
2	**Timing-Relevancy Analysis**	20 discrete methods privileging variably timing (publication date) v impact (times referenced) under various ranking approaches	• Tractable • Addresses disadvantages of Method 1	• Subject to Interpretation of an origins cut-off point in ranking graphical outputs
3	**First Decade Impact**	Identification based on the impact of potential origins (Method 2) within the first decade	• Enhances Method 2 focus	• Does not distinguish between theoretical import of studies
4	**Theoretical Import**	Identification based on theoretical import of potential origins (Method 2)	• Enhances Method 2 focus	• Does not distinguish first decade impact of studies
5	**Compound**	Utilising methodologies 1 to 4 inclusive to intelligently identify robust origin studies	• Optimisation • Provides tractable justification	• Remains subject to some interpretation

Table B-6. Methodology for determining IOR-power conceptual origins

Five reasonable approaches were considered as outlined in Table B-6. First, origins determined based on power theories drawn upon by the *first* IOR-power study identified. One disadvantage of this methodology was that it might exclude ultimately more influential contemporary theories. The second approach was to analyse time of publication (top 10 earliest) versus relevancy based on how often a theory was referenced by level 0 studies (top 10 most referenced). In total 20 discrete methods, detailed in S-Appendix LR-1, were discernible to rank studies as origins variably privileging study timing over relevancy. Distinguishable highly ranked studies *across* methods reasonably stood as viable origins. The third methodology entailed delimiting studies identified using methodology 2 to studies referenced in the first decade of IOR-power theory development, as more logically standing as origins. The disadvantage was that referencing may have been cursory with limited theoretical import. The fourth approach was thus to alternatively delimit methodology 2 studies based on theoretical import, possibly compromising the notion of origin.

B.5.7 Detailed critical interpretative analysis of core studies

Stage 3 analysis

Stage 3 focused on the four origin studies (Dahl, 1957; Emerson, 1962; French and Raven, 1959; Simon, 1953) in setting a trajectory of theoretical development in the IOR field of study. The purpose was to unearth the detailed foundations of IOR-power theory. Through consistent comparison of detailed text across studies, common salient descriptive and explanatory qualities employed to characterise power were identified as power attributes representing theory convergence across studies. These attributes were further assimilated into a preliminary conceptual framework by functional characteristic signifying a shared functional role of the attributes according to conceptual arguments offered. Each attribute was then analysed to capture significant features representing material divergences in power theory, as distinct from emphasis. All attributes, features, and supporting study text were first collated into individual characteristic tables and then summarily captured into a single comparative table.

Stage 4 analysis

Stage 4 (SLR1 level 0) proceeded using the preliminary conceptual framework as a baseline to establish if and when each attribute was first adopted, developed, or challenged by a level 0 study. The purpose was to capture IOR-power theory evolution from its foundations. Detailed text of each study was evaluated in date order (1969-2011) to isolate discrete theoretical developments in each attribute across studies and surface any new attributes. Individual attribute mind maps were generated to assimilate discrete developments, standing as a main claim or sub-claim, and the associated primary source study (first study to posit claim). Salient links between attribute developments were noted within each mind map, as exemplified in Figure B-2 in the mapping of theoretical development in attribute 'means' that principally captures an act taken by agent A that is *directly* linked to inducing a behaviour effect (Appendix D.3.6).

NEGOTIATION
MICRO-political bargaining power including tactical framing of issues

Dörrenbächer & Gammelgaard (2011)

STRATEGIES
Supplier perspective - FOUR major strategies to improve power balance
(a) Innovation
(b) Systems integrator
(c) Specialisation
(d) Internationalisation

Akpinar & Zettinig (2008)

Dapiran & Hogarth-Scott (2003)

COMMUNICATION
SHARING poor product performance INFORMATION with suppliers - EXPECT suppliers to see the obviously good decision

Cox et al (2001a) [Cox 1999]

SPECIFIC
ISOLATING MECHANISMS to create/enhance supplier power

METHODS
(a) Coercion
(b) Dependency
(c) Inducement
(d) Persuasion
(e) Activation of commitments

Stannack (1996)

Gaski (1986)

COMMUNICATION MEDIATOR
MEANS = communication mediator
(a) Developing power sources
(b) Mediate between these and their exercise

Brown et al (1995)

STRATEGIES
Important Factors:
(a) How influence attempts are FRAMED
(b) WILLINGNESS to bring them to bear

MEANS
TOTAL = 15

NEGOTIATION
Negotiation PROCESS

Beier & Stern (1969)

NEGOTIATION
Negotiation APPROACH - ATTITUDES subject to perceptions of power structure

Heskett et al (1970)

DIRECT v INDIRECT (Ecological)
Power not only exercised in 'face to face' bargaining situation
Merits BROADER APPROACH recognizing control of perceived alternatives or the environment of other actors

Wilkinson 1996 (1973)

SCOPE
Dahl (1965) restricts power to sanctions - MEANS are NOT limited to sanctions in this study

Wilkinson (1974)

NEGOTIATION
Bargaining power is the ESSENTIAL MOTIVATING FORCE - ultimately brings about agreement on the issues

Kochan (1975)

STRATEGIES
Influence Strategies to MOTIVATE others
(a) Explicit non-weighted
(b) Explicit weighted

Brown & Frazier (1978)

STRATEGIES
Power is NOT always USED

Frazier (1984)

STRATEGIES
THREE general influence CATEGORIES
(1) INDIRECT Influence Strategies
(2) DIRECT Influence Strategies
(3) BEHAVIOURAL CONTROL Strategies

Frazier (1984)

Figure B-2. Mapping theoretical evolution of attribute Means

56

Further to mapping theoretical evolution, focused cross-study syntheses were conducted on power definitions employed, posited models, and dimensions operationalised, centred on exposing levels of consistency, completeness, and any meaningful patterns. Explicit theoretical challenges were then summarily tabulated and critically evaluated, distinguishing between direct challenges to origin studies (general theory) versus prior level 0 studies.

Stage 4 (SLR2 level 0) detailed data analysis of core studies re-assessed relevance of the research undertaken thereafter whether parallel theoretical developments supported, challenged, or extended the posited explanatory theory developed in Chapter 4.

Stage 5 analysis

Stage 5 concentrated on detailed synthesis of theory importation from general power theory studies (P Theory) followed by level 2 studies by context category. The purpose was to establish the extent to which IOR-power theory had been progressively influenced by other power study fields. Distinguishing from general cursory referencing, contracted summaries of all explicit material theoretical imports across level 0 studies were collated by source study (P Theory; level 2) into summary profiles, including the number of associated level 0 studies and date period of theory importation.

Stage 6 analysis

Stage 6 turned to final critical synthesis of all detailed theoretical developments. The purpose was to establish a summary theoretical landscape to underpin developing answers to the review question. Dominant perspectives for each power attribute were defined by features attracting the strongest general level of recognition. Salient material divergences from these features were then mapped first across the origin studies thereafter by decade across level 0 studies, to construct marginalised perspectives. Recognising important links across attributes, contestations preventing meaningful integration of perspectives were identified constituting a critical perspective of IOR-power theory. At this stage of synthesis, relevant findings from *periphery* studies were consciously recognised, contributing to the critical perspective developed.

Stage 7 analysis

Stage 7 concluded the critical synthesis by analysis of each main claim significance. Individual mind maps were generated for conceptualisation, operationalisation, and evidence claims, capturing contracted summaries of claims, significance levels, including study page references. Salient links between study claims were noted. The significance of study main claims, were further mapped against study centrality, indicating further under-exploited or marginalised claims.

Independent tabulated summaries of core studies and periphery studies were compiled to consolidate study key data. For all studies, titles, purpose, and main claims were collated. The main utility of the study in this research, quality scores, and source (search / reference) were also captured. Specifically for each core study, key analytical details including centrality and claim significance were included. A *selected* study limitation for each study was further included to capture and reflect the *range* of limitations variably present across core studies. Periphery studies were not subject to detailed analysis. Accordingly, final relevancy levels assigned were included rather than analytical details.

B.5.8 Core studies general analytical categories

General category and classification codes employed are detailed in S-Appendix LR-1. General profile coding included recognised codes namely, literature type (Wallace and Wray, 2006), theoretical perspective (HESA, 2011), empirical methodology (Flick, U., E. von Kardoff, and I. Steinke, 2004; Olsen, 2009) and IOR types (channel position / product/service category and relationship role) as specified by study authors. Centrality and cohesive classifications based on reference patterns were also employed, as follows.

Centrality and cohesiveness of core studies

The centrality of a core study was classified based on the number of times the study was referenced by another core study. There are seven classifications commencing with C representing *the* core of the literature, that being the four origin studies. Core studies referenced 10 or more times (>/-10) are classed as C1 studies representing the next layer of centrality. Thereafter, first a further three categories C2, C3, C4 respectively capture studies referenced 6-9 times, 2-5 times, and 1 time. For studies not themselves referenced but referencing other core studies, a level classification of P is accorded, signifying the study lying at the periphery of core studies. Lastly, studies neither referencing any other core study nor themselves referenced, are classified as E, standing for external or disconnected from other core studies.

Thus, moving from C1 through to E, studies become less embedded such that broadly, if *all* studies were C1 and C2 level, this would indicate a high level of cohesion or inter-connectivity between studies in contrast to *all* studies being at level C4 to level E, signifying low cohesion or inter-connectivity. A majority of studies being at level C1 to C3, would broadly signify a medium level of cohesion. The level of cohesion indicated the extent to which IOR-power theory had coherently evolved or conversely emerged in a disjointed manner. Referencing patterns that is common referencing across groups of studies provided further indication of channels of cohesion.

B.5.9 Core studies specific analytical categories

Specific category and classification codes employed are detailed in S-Appendix LR-1. Specific coding was employed to support *detailed* analysis and assimilation of study data and included theoretical distinctions (e.g. attribute versus conceptual framework), power definition consistency types, process types, type of knowledge claim (Wallace and Wray, 2006) and claim significance (Sandberg, 2005; Smith, Flowers and Larkin, 2009; Wallace and Wray, 2006) from which an overall claim significance level was determined as follows:

Significance of core study main claims

The significance of a study main claim was derived from the claim *utility* in terms of certainty and generalisability (Wallace and Wray, 2006), and claim *quality* in terms of reliability and validity (Sandberg, 2005; Smith, Flowers and Larkin, 2009; Wallace and Wray, 2006). For each study main claim, based on study reported utility and researcher assessment of quality, each feature is accorded a low (L), medium (M), or high (H) classification level.

Level 5	Level 4	Level 3	Level 2	Level 1
Low (L)	LOW-Medium (L-M)	Medium (M)	Medium-HIGH (M-H)	High (H)
4 5	6 7	8	9 10	11 **12**

Minimum Score — Maximum Score

	Low	**Medium**	**High**	
Reliability	1	2	3	
Validity	1	2	3	Assigned Scores
Certainty	1	2	3	
Generalisability	1	2	3	
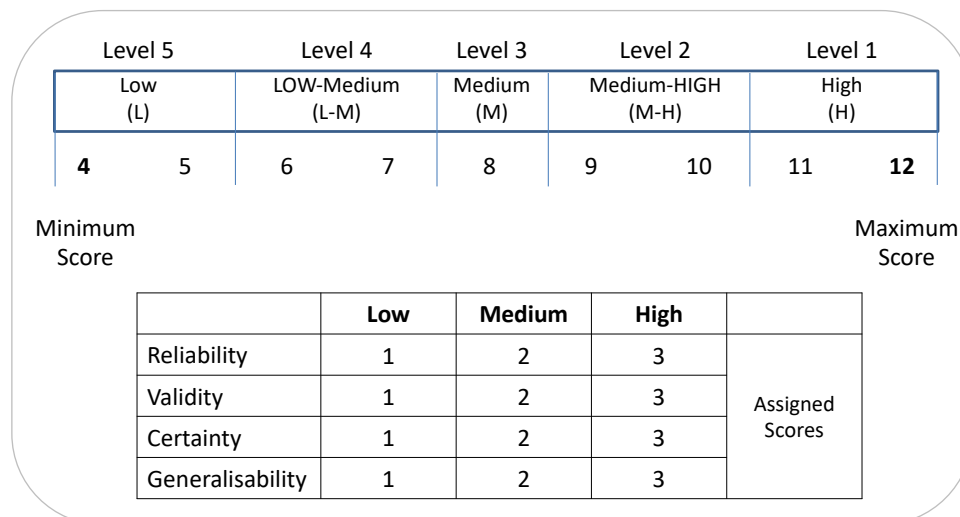
Figure B-3. Main claim significance scoring method and levels

As depicted in Figure B-3, to obtain an overall comparable significance level, each feature is scored using a simple, non-weighted scoring system of low = 1; medium = 2, and high = 3. The summation of feature scores for each main claim generates a claim score on a scale of 4 to 12, from which five significance levels are generated. The highest level (level 1) corresponds to high significance (11-

12 score), and lowest level (Level 5) to low significance (4-5 score). Three levels in between consist of low-medium (6-7 score), medium (8 score), and medium-high (9-10 score) claim significance. The higher the level of claim significance (maximum level 1 or High) indicates increased worthiness of attention to the claim but not directly the magnitude or gravity of the claim in advancing IOR-power theory.

B.6 Body of literature

The numbers of primary studies sourced and evaluated amounted to 2,723 in the initial search (SLR1) and 1,909 in the extended search (SLR2). Only 2 common studies (category X) were found (day overlap). SLR1 level 0 studies yielded a further 1,953 referenced studies (SLR1 Ref) and SLR2 a further 658 referenced studies (SLR2 Ref) as shown in Figure B-4.
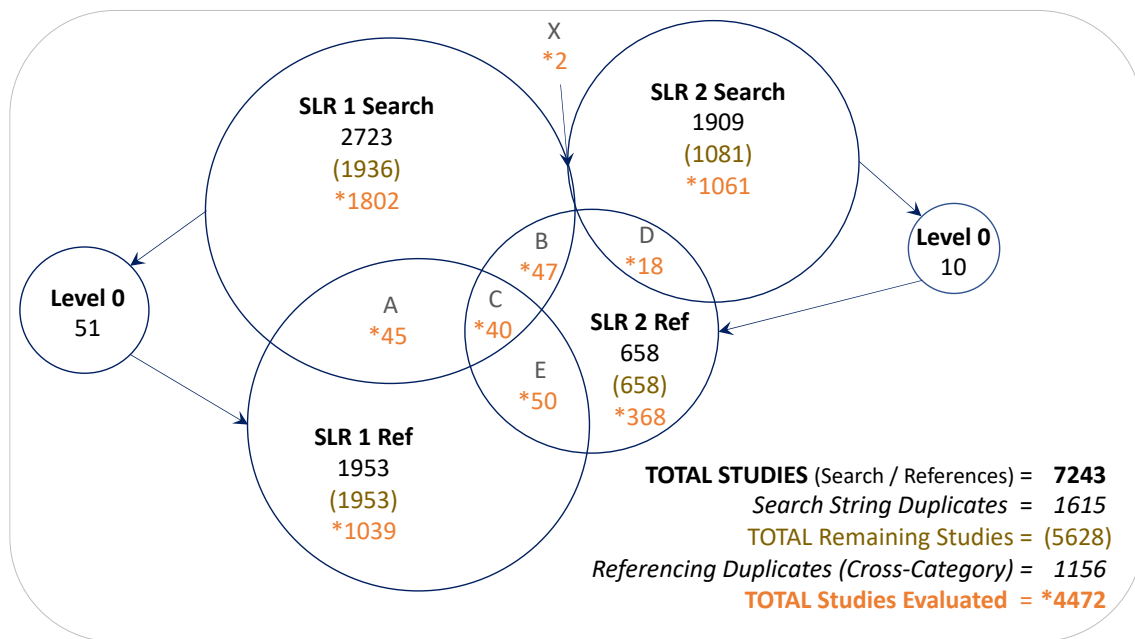
Figure B-4. Mapping of search and reference studies

Thereafter, several studies were common within (Annotated A, and D) and across the two searches (Annotated B, C, and E), *through* referenced studies (SLR1 Ref and SLR2 Ref). Eliminating all duplicated referenced studies, a total of 4,472 studies remained as the body of literature with a level profile shown in Figure B-5. Most studies were level 3 studies (1,287) thereafter in descending numerical order was level 4 (1,202), level 5 (926), level 1 (828), power theory (80), level 2 (67), level 0 (61), level 6 (17), and lastly IOR-power origins (4).

	Power Theory	ORIGINS	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
SLR 1&2	12	3	23	69	2	2	27	1	0
SLR 2	11	0	10	234	19	485	302	386	0
SLR 1	57	1	28	525	46	800	873	539	17

Total Studies = 4472
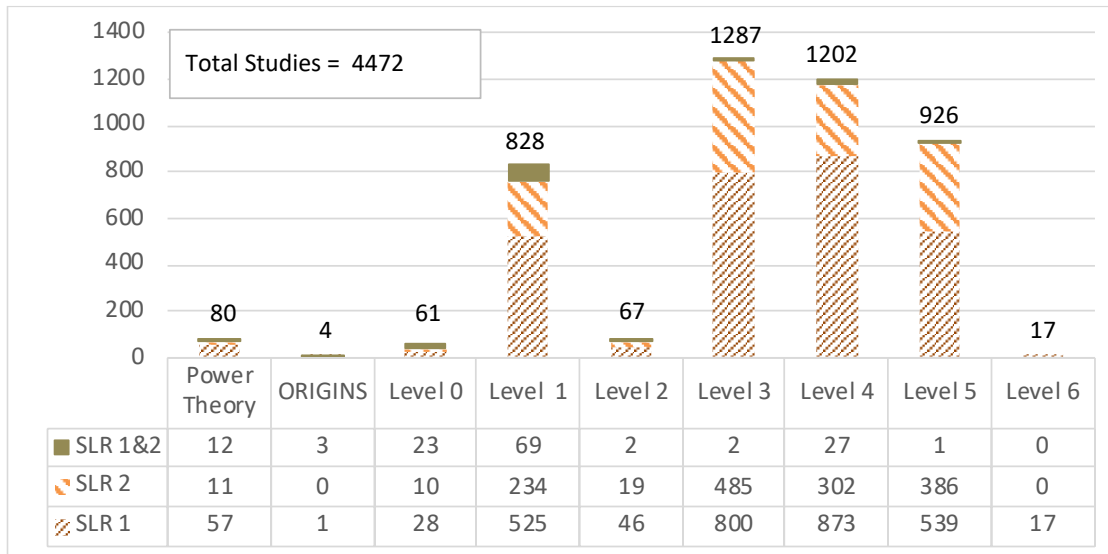
Figure B-5. Body of literature level profile of studies

B.7 Power origins

As shown in Figure B-6, all four designated origin studies were amongst five studies emerging most often as origins across all 20 methods. French and Raven (1959) dominated as an origin study being initially ranked first across 14 methods (SLR1), and continued to dominate being ranked first across 15 methods (SLR2). Notably Galbraith (1952) was by methodology 2 overall a more viable origin than Emerson (1962), and Weber (1947) a close contender.

SLR 1 Power Origins - Ranked Position

	Russell 1938	Weber 1947	Bierstedt 1950	Galbraith 1952	Simon 1953	Dahl 1957	F&R 1959	Emerson 1962
5th	0	4	0	6	2	2	1	2
4th	0	1	0	6	8	2	1	2
3rd	0	2	1	1	3	6	0	5
2nd	4	2	1	3	3	8	2	3
1st	3	1	0	0	2	0	14	0

SLR 1 & SLR 2 Power Origins - Ranked Position

	Russell 1938	Weber 1947	Bierstedt 1950	Galbraith 1952	Simon 1953	Dahl 1957	F&R 1959	Emerson 1962
5th	1	4	0	7	2	2	1	2
4th	0	2	0	4	9	3	2	2
3rd	1	3	1	1	3	8	0	2
2nd	2	1	1	3	3	6	1	7
1st	3	1	0	0	2	0	15	0

Figure B-6. Viable power origins based on methodology 2

Method 3 – Top 10
Privileging impact (reference ranking) – ADD date ranking

Method 16 – Top 10
Privileging actual publication date – MULTIPLY actual reference number
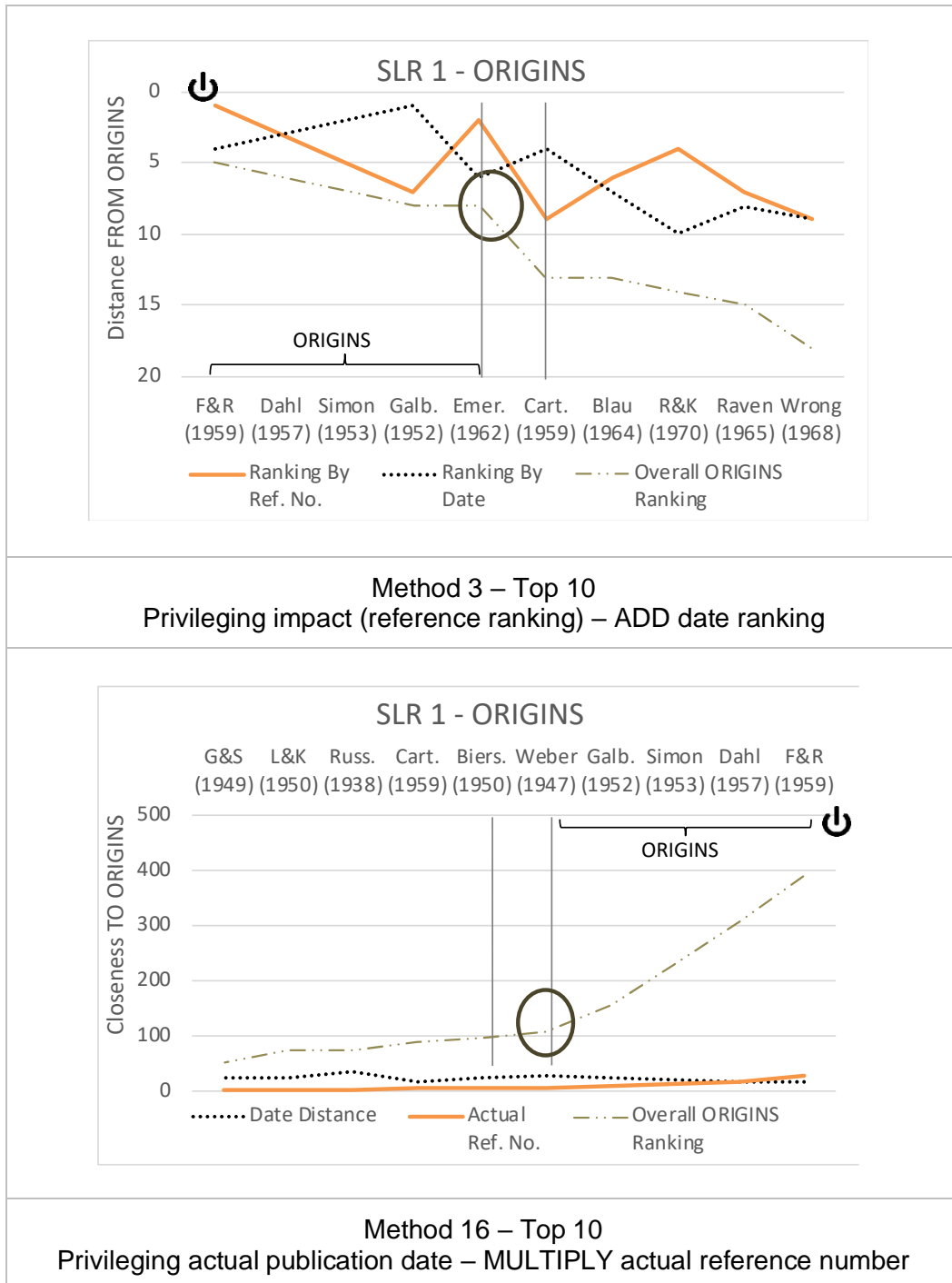
Figure B-7. Power origins determination adopting methods 3 and 16

Exemplifying importance of methodology to identifying theory origins is Figure B-7. Method 3 included Emerson (1962) as an origin, whereas method 16 excluded Emerson (1962). Method 3 is a ranking system that establishes the top 10 studies (1 to 10) first by impact (times referenced), thereafter *adds* a ranking for these studies (1 to 10) by timing (earliest date) to generate an overall origin

score. Method 16 in contrast establishes top 10 studies first by determining a date distance score (S-Appendix LR-1) reflecting in relative years how much later each study was published after the earliest referenced power theory study (Russell, 2004 first published 1938). The overall date distance score is then multiplied by the actual number of times referenced to generate an overall ranking score. Origins thereafter are in principle the five studies with the lowest (method 3) or highest (method 16) overall origin score and closest to the absolute origin (⏻) followed by a continued gradient (shallow or sharp) in the graphical profile.

Note: Goldhamer and Shils (1939) referenced publication date by Beier and Stern (1969) of 1949 was used in the analysis. Study was referenced twice, similar to Russell (1938). Adopting correct publication date of 1939 (Lusch 1977) its relevance mirrored Russell (1938) with no impact on analysis outcome.

Methodologies 3 and 4 (Section B.5.6, Table B-6) enabled finalising the most robust origins in the IOR context. In the first decade of IOR theory development (1969 to 1979), viable origins Russell (1938), Weber (1947), and Bierstedt (Bierstedt, 1950) were *not* referenced by a core study (methodology 3). Theoretical import from Galbraith (1952) was only in the first decade and related to recognising countervailing power as part of a systemic and macro explanation of capitalism. This contrasted with the selected origins that marked in the broader power literature a move towards establishing a more rigorous and measurable concept of power, more extensively drawn upon in detail in the first decade and thereafter.

The established clear and justifiable theory origins (Dahl, 1957; Emerson, 1962; French and Raven, 1959; Simon, 1953) were amongst 82 *general* power theory studies drawn upon by core studies as shown in Chapter 2, Section 2.4.3.3 (Figure 12).

B.8 Core studies profile

B.8.1 Quality of studies

Quality evaluation results for identified origin studies and *potential* level 0 studies are presented in Figure B-8. Quality threshold levels were not satisfied by 21 SLR1 and 8 SLR2 studies evaluated. These 29 studies nevertheless remained informative as *periphery* studies in part adding weight to conclusions drawn from the review. The majority of SLR1 studies (84%) were of reasonable quality with 25 studies scoring 70-79% and 21 studies scoring 60-69%. Similarly, the majority of SLR2 studies (80%) were of reasonable quality with 5 studies scoring 70-79% and 3 studies scoring 60-69%. Overall average quality score was 68%.
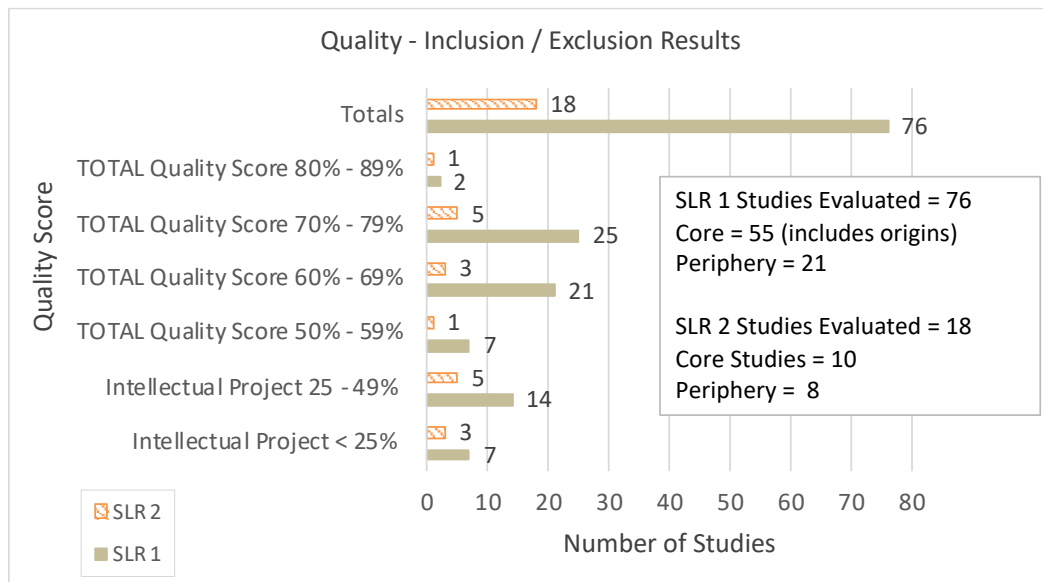
Figure B-8. Quality evaluation results of potential level 0 studies

B.8.2 Literature type

The profile of literature type (Wallace and Wray, 2006) is shown in Figure B-9 Core studies were strongly theoretical based but a proportionally higher number of SLR1 studies, 62% (34) versus SLR2 studies, 40% (4) utilised empirical research to advance theory. There were clear aims to influence IOR management policy in 10 of the SLR1 studies and in 2 of the SLR2 studies.
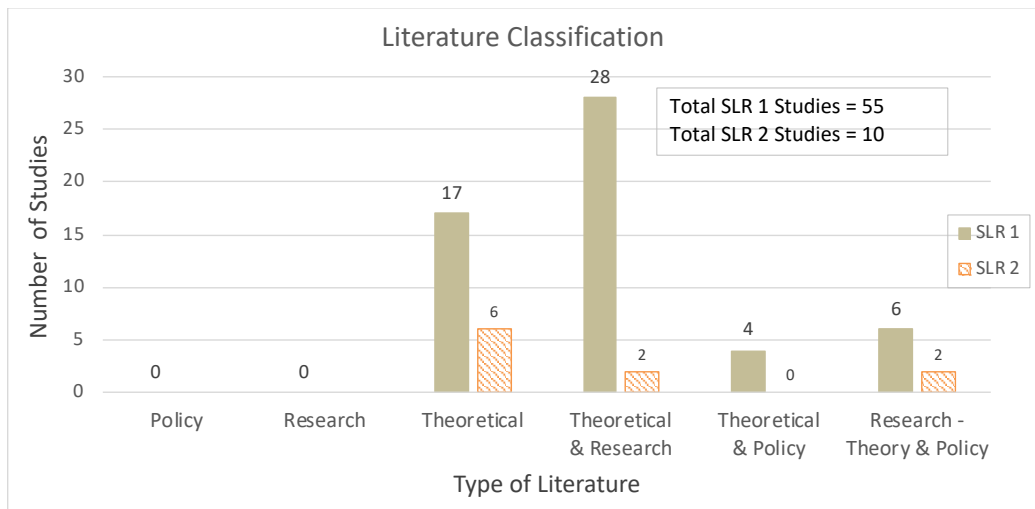
Figure B-9. Profile of literature type

B.8.3 Empirical methods employed

Following on from capturing the level of empirical research undertaken, Figure B-10 displays how from the 1970s to the 1990s, quantitative methods dominated, being used in 24 of the 34 SLR1 studies. Two studies employed both quantitative and qualitative methods during this time and one study was purely qualitative. Post 1990s, although a further 4 studies were quantitative based, the remaining 7 SLR1 studies were qualitative. The 4 SLR2 studies involving empirical research were also qualitative based. The profile thus indicates a move from quantitative to qualitative methods to advance IOR-power theory.

SLR 1 Empirical Methods

Total SLR 1 Studies = 55
Empirical Studies = 34

	1950 - 1959	1960 - 1969	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 +	TOTALS
QUANT itative	0	0	7	8	5	4	0	24
QUAL itative	0	0	0	0	1	6	1	8
Mixed			1	1				2

QUANT itative   QUAL itative   Mixed
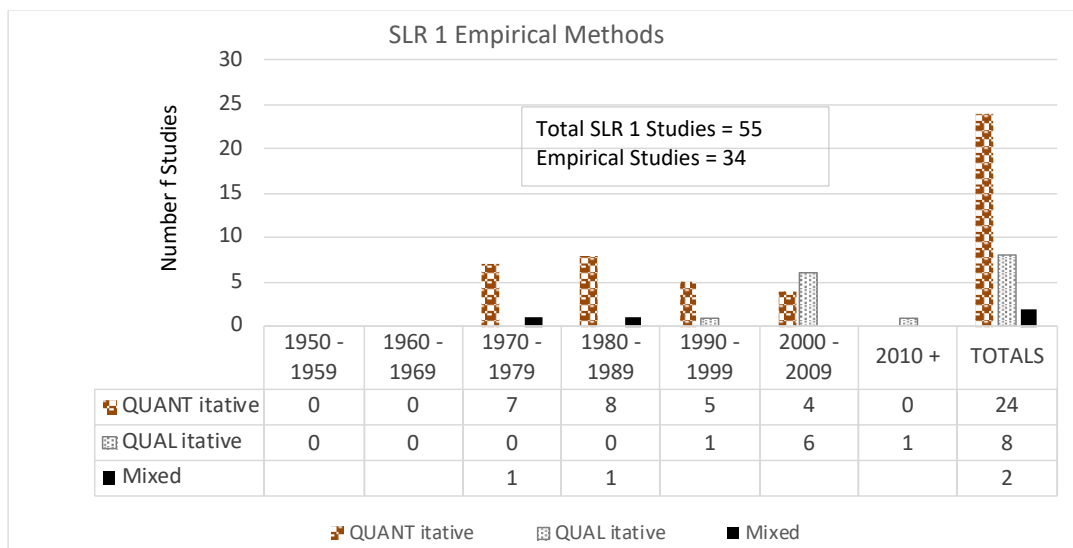
Figure B-10. Empirical methods employed

B.8.4 Types of IORs studied empirically

As displayed in Figure B-11, 16 types of IORs were studied based on reported organisation classifications in the 38 empirical studies (SLR1 and SLR2). The dominant relationship drawn upon was between manufacturers and retailers or wholesalers (12 studies). Franchisor-franchisee relationships were the next most studied relationship type (5 studies). Thereafter, empirical data supporting theory development was sourced from a range of IORs from non-government organisations (NGO) and inter-government organisations (IGO) relationships to broker-wholesaler relationships.
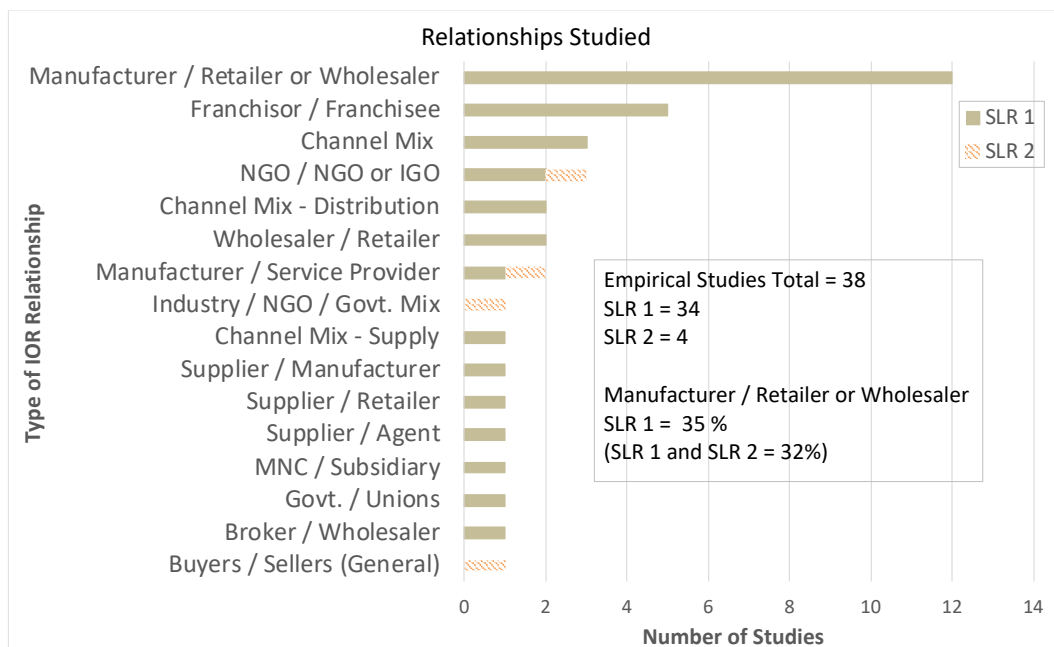
Figure B-11. Profile of types of IORs studied empirically

Notably, the profile revealed IORs were predominantly positioned within industrial distribution channel contexts, that is 24 of the 38 empirical studies (63%). This compares to only 1 study focusing specifically on industrial supply channels, and 1 study on industry internal channels and specifically IORs between head offices and subsidiaries within multi-national corporations (MNC). Several studies (16%; 6 studies) were also positioned within a public service context split equally across SLR1 and SLR2 studies. A further 6 SLR1 studies embraced multiple IOR types across a channel that in 2 studies included trade associations.

Further shown in Figure B-12, the broad range of IOR types drawn upon related to products and services extending across at least 21 types of goods from kitchen furniture to postal services. IORs related to industrial equipment / components and automobiles were the most highly studied (7 studies), thereafter fast-moving consumer goods (FMCG) (5 studies).
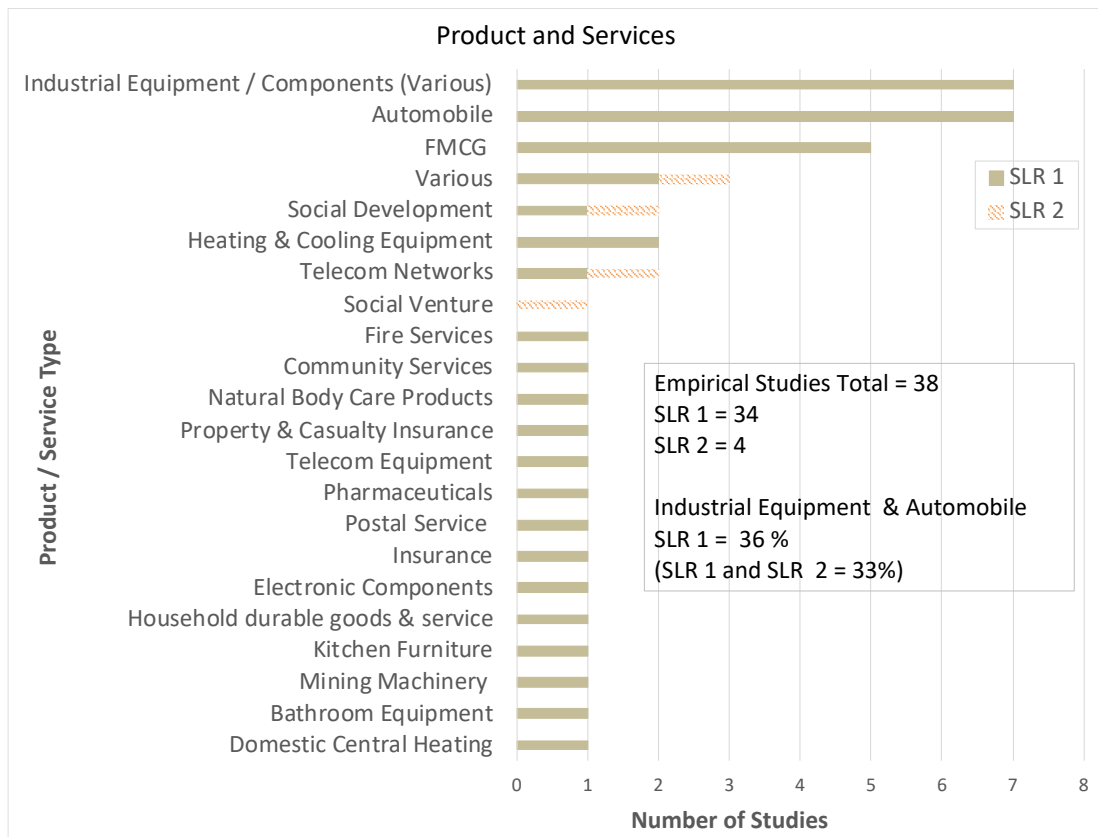
Figure B-12. Product and service types studied empirically

B.8.5 Theoretical perspectives

Figure B-13 maps core studies across eight theoretical perspectives variably adopted: psychology; sociology; politics; economics: social-psychology; socio-economics; political-economics; and political-sociology. Categorisation of a core study perspective was guided by the perspective of the power theories drawn upon, for example Russell (2004) and Lasswell and Kaplan (1950) were viewed to have adopted political-sociology perspectives with Lasswell and Kaplan (1950) more aligned to politics. Simon (1953) explicitly aligned his perspective to Lasswell and Kaplan (1950). Categorisation also depended on study expressed theoretical perspective(s).
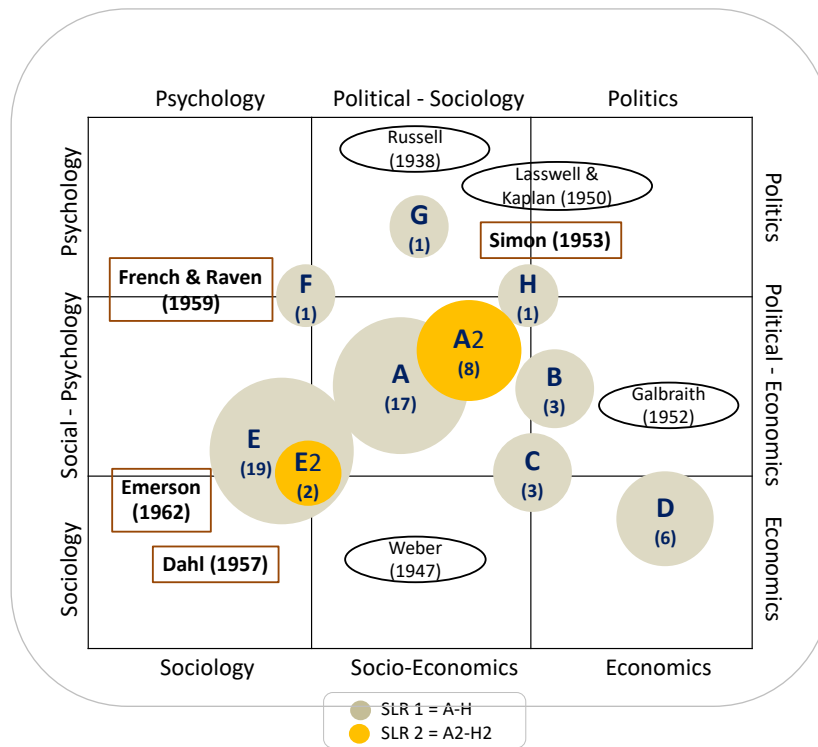
Figure B-13. Mapping of adopted theoretical perspectives

As depicted, commencing with SLR1 studies, 17 were multi-perspective (A) with a slight weighting towards social-psychology. Slightly more studies (19) were social-psychology based (E) with some also embracing a socio-economics perspective and one study (F) more aligned to political-sociology. In comparison only 6 studies (D) adopted an economic perspective with political undertones. A further 7 studies (B, C, H) were predominantly political-economic led studies but reflected to varying levels a weighting towards politics or economics and in turn

a sociology perspective. The remining study (G) adopted a political-sociological perspective. SLR2 studies also primarily adopted a multi-perspective with 8 studies (A2) marginally weighted towards politics and the remaining 2 studies (E2) adopting a combined social-psychology and socio-economics perspective.

B.8.6 Centrality and cohesiveness

Reference analysis as presented in Figure B-14 revealed first the majority of SLR1 studies to be level C4 (17%) periphery (P) studies (35%) and external (E) studies (14%) totalling 66%, related to a core of C1 (16%), C2 (4%) and C3 (14%) studies representing 34% of studies. Including SLR2 studies, the overall profile remained similar with 64% standing as level C4 (23%) periphery (P) studies (31%) and disconnected or external (E) studies (10%) related to a core of C1 (16%), C2 (2%), C3 (18%) studies representing 36% of studies.

CENTRALITY Level	No. Times Referenced	SLR 1		SLR 2 Changes	
		No. Studies	% of Studies	No. Studies	% of Studies
C (Origins)	-	(4)	-	(4)	-
C1	>/= 10	8	16%	10	16%
C2	6 – 9	2	4%	1	2%
C3	2 – 5	7	14%	11	18%
C4	1	9	17%	14	23%
P	0	18	35%	19	31%
E	0	7	14%	6	10%
Total Studies		55		65	
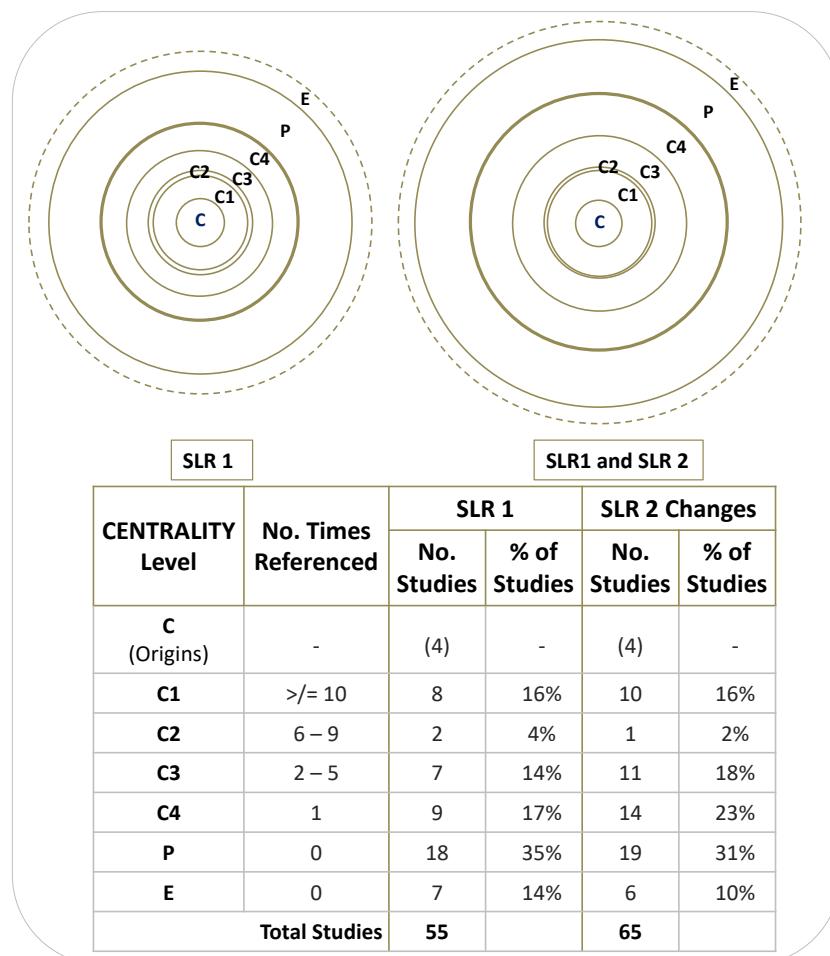
Figure B-14. Profile of centrality and degree of cohesiveness of core studies

The centrality profile complimented by group reference patterns as depicted in a mapping extract provided in Figure B-15 indicated a relatively low level of cohesion across studies being mostly level C4 and above (Appendix B.5.8). Full reference mapping is included in S-Appendix LR-4.
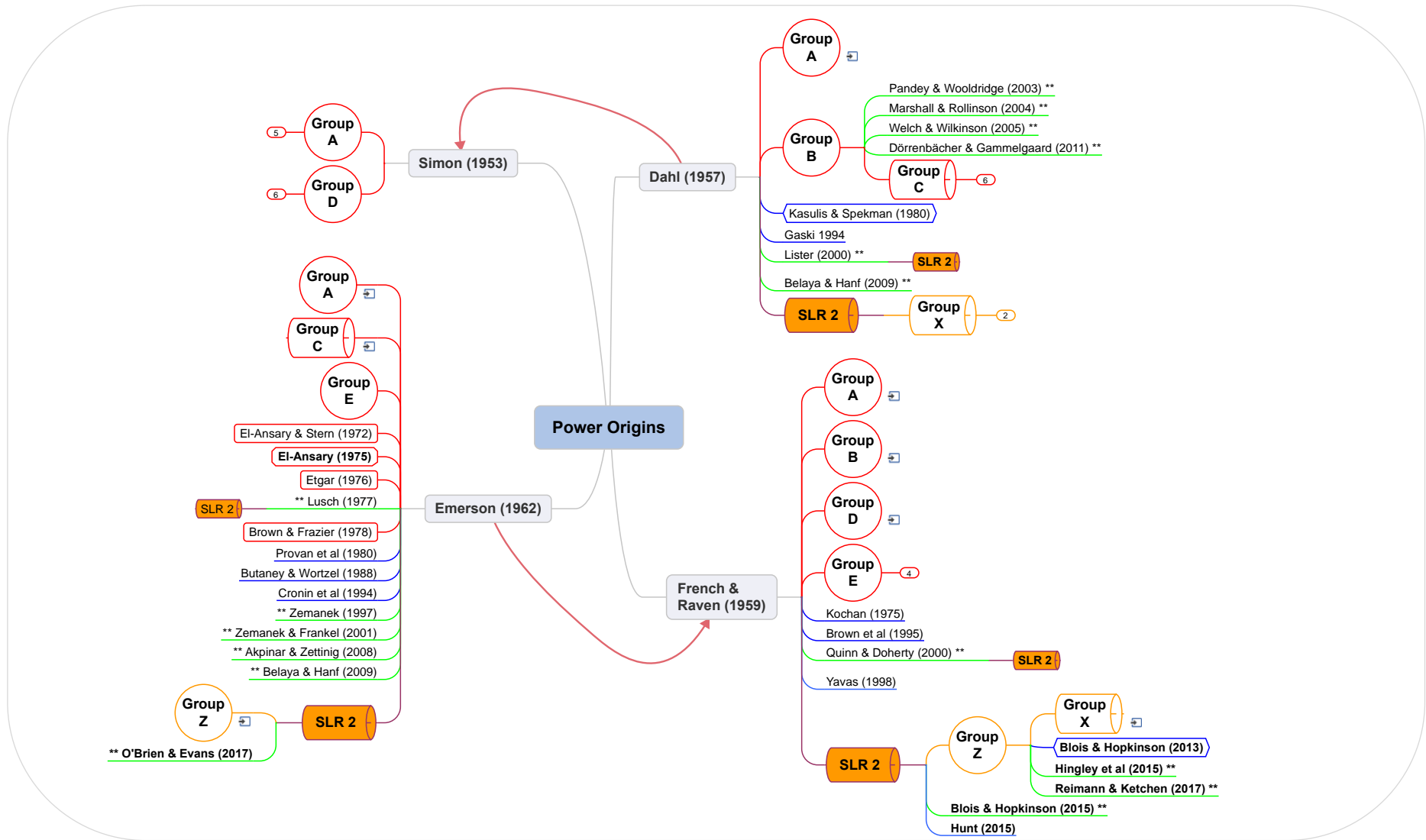
Figure B-15. Mapping of referencing of origin studies exposing patterns

75

B.9 Core studies summaries

More comprehensive tabulated summaries are provided in S-Appendix LR-4 and includes periphery studies.

B.9.1 SLR 1 Core studies extracted profiles

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
1	Simon (1953)	Power is the dynamic 'Exercise of Influence' manifesting itself in asymmetric relationships as the ratio of behaviour change A/B. Power may be difficult to observe (obscured) due to anticipation of reactions however it possibly can be measured using units other than cardinal units that must take account of reciprocal power relations and expectations.	Medium – HIGH	No formal consideration of alternative power theories [Critique of Lasswell & Kaplan, 1950].	Theoretical	Political-Sociology	Q1 Q2 Q3 Q4	79		Y	C
2	Dahl (1957)	Conceptual framework of 'power', enabling the measurement of relative power across 'comparable' power relations (within reasonable limits) in different research contexts.	Medium – HIGH	Absence of rationale to justify comparable relations.	Theoretical	Sociology	Q1 Q2 Q3 Q4	74		Y	C
3	French & Raven (1959)	Distinguished five types of power: referent power, expert power, reward power, coercive power, and legitimate power and 6 hypotheses relating to the effects they produce and the other effects which accompany the use of power.	Medium – HIGH	Restricted to enduring relationships and predictable behaviour. [See theory development framework].	Theoretical	Social-Psychology	Q1 Q2 Q3	81		Y	C
4	Emerson (1962)	A theory of power for a wide range of social events, which states that (a) power is Potential-influence rooted in dependency on others, equating to the amount of resistance of another which potentially can be overcome, and (b) through 'balancing operations' is dynamic in nature.	Medium – HIGH	Resistance as a pre-requisite of power.	Theoretical	Social-Psychology	Q1 Q2 Q3 Q4	68		Y	C
5	Beier & Stern (1969)	A conceptual approach to understanding power in inter-organisational relationships.	Medium	Assumption: Organizations as individuals with a distinct personality, needs and wants inferring organisations can be directly influenced, under-stating complex nature and constitution of organisations.	Theoretical	Group A (Multiple)	Q2	64		Y	C1

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
6	Heskett et al (1970)	In the absence of operational empirical measures, a logical and theoretically based structure (a framework of possible measures depicting a linkage between 'power bases' and 'uses of power') is presented enabling 'structured' observation and analysis of power bases in IOR relationships the use of which will yield results of some future value.	Medium	Complexity and dynamic nature of power may defy observation and analysis.	Theoretical	Group A (Multiple)	Q2 Q4	58	Y	Y	C3
7	El-Ansary & Stern (1972)	Model (equations) and procedure outlined probably bring us closer to rigorous, empirical analysis of power relationships in distribution, instead of the anecdotal approach to analysis so often found in the channel literature.	LOW	Under conceptualisation of power leading to an over-simplified model as a basis for power measurement.	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3 Q4	59	Y		C1
8	Wilkinson (1996 [73]) First Published 1973	Isolation of the various factors underlying the way power is used and the results of such use into a flowchart providing a useful basis to guide firms in planning how to use their power more effectively and/or resist the power of others better.	Medium	Insufficient robust evidence to support normative stance on how power is used to guide practice.	Theoretical & Policy	Group A (Multiple)	Q2	70	Y	Y	C4
9	Wilkinson (1973)	Many different patterns of power and influence between channel members may exist given several distinguishable features and dimensions of power and influence, and there is much more work both of a theoretical and empirical nature required to determine the patterns that exist in particular channels rather than rely on insightful speculation.	Medium	Justification of definition / distinction accorded to key concepts; Power and Influence. [Basic definition in footnote]	Theoretical	Group A (Multiple)	Q2 Q4	78	Y	Y	C3
10	Hunt & Nevin (1974)	Empirical evidence that: (a) significant relationship exists between the power of a channel member and sources of power available to him (b) consequences of exercising power in a channel of distribution depend on sources of power exercised (c) increase franchisee satisfaction by relying less on the coercive sources of power.	LOW - Medium	Empirical data based on responsibility employed as a euphemism for control and questionable dichotomisation of sources.	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3 Q4	64	Y		C1
11	Wilkinson (1974)	A potentially valid systematic procedure for measuring power in channels of distribution.	LOW - Medium	Incorporates single informant bias. [See Phillips, 1981]	Theoretical & Research	Sociology	Q3	64		Y	C1

77

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
12	El-Ansary (1975)	Different pattern of determinants of dependence in channel relations from those suggested by Emerson and power may be measured simply by measuring stake and commitment to marketing mix programs.	LOW	Incomplete interpretation of Emerson's theory. [See also El-Ansary & Stern (1972)]	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3	51	Y		C2
13	Kochan (1975)	Future interorganizational research should focus more directly on power relations between organizations, on institutional factors specific to the type of relation studied, and on the interaction between external pressures and internal political forces impinging on organizational decision makers.	HIGH	Robustness and completeness of measures. [Notably relative power]	Theoretical & Research	Political-Economics Sociology	Q2 Q3	79	Y		C4
14	Etgar (1976)	Empirical evidence to support that power sources of the holder are more potent as control generators than dependency of power target, and may imply that in conventional channels, such as the one explored, indirect, non-pecuniary power is more effective than monetary rewards or threats in inducing dealers to accept controls.	LOW - Medium	Validity of distinction between dependency and power sources.	Research – Theory & Policy	Social-Psychology Socio-Economics	Q2 Q3	60	Y		C1
15	Lusch (1977)	A generalized index of power is not the preferred measurement procedure to adopt in power studies.	HIGH	Transparency – Justification for representative sample.	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3	83	Y		P
16	Brown & Frazier (1978)	Power-process model postulating specific hypotheses for relationships between the use of explicit weighted and non-weighted influence strategies, and actor behavioural constructs.	LOW	Significance of prevailing conditions on postulated hypotheses and empirical findings.	Theoretical & Research	Group A (Multiple)	Q2 Q3	65		Y	C1
17	Ford (1980)	Observations and recordings of beliefs, attitudes, and language of respondents in realistic situations is necessary to understand marketing channels and phenomena such as power and more generally, requiring a re-emphasis on the quality of basic data acquired during marketing research rather than greater sophistication in data analysis.	HIGH	Power not formally defined and distinguished from other relational phenomena under-investigation.	Theoretical & Research	Group A (Multiple)	Q3 Q4	70	Y		P
18	Kasulis & Spekman (1980)	Present a framework outlining the responses which may ensue from the exercise of power serving as a guide to the marketer to administer the marketing channel (Compliance Identification and Internalisation) more efficiently.	Medium	Probability based behavioural explanation without supporting empirical evidence or clear theoretical basis.	Theoretical & Policy	Group A (Multiple)	Q2	59	Y		C3

78

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
19	Provan et al (1980)	Empirical evidence demonstrating that other linkages between an organization and its environment may modify its dependency on a resource supplier, and that correlations between power and power sources must distinguish between potential and enacted, objective and perceived power, to be meaningful.	HIGH	Levels of explicit / implicit researcher interpretation of quantitative data.	Theoretical & Research	Political-Economics Sociology	Q2 Q3 Q4	71	Y		C4
20	Lusch & Brown (1982)	Revised and extended framework (perspective) of sources and consequences of power, which may provide one tenable post hoc explanation of the counterintuitive results obtained in this and other studies (Hunt & Nevin, 1974; Etgar, 1978).	LOW	Coherence of argument – relevant data captures actual control; and coercive power sources; non-coercive power sources of one party, not use of either power source types by any party - precludes meaningful explanations	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3	57	Y		C1
21	Frazier (1983)	Encouraging evidence on the role performance approach to power measurement, its main strength being it provides an underlying rationale to: (1) Explain how a firm's dependence is built and maintained in a relationship, (2) Help specify the domain of interfirm elements needed to represent adequately a firm's dependence on another firm.	Medium	Acknowledged limitations including single respondent bias and absence of a recognised, well established theoretical framework.	Theoretical & Research	Group A (Multiple)	Q2 Q3 Q4	77	Y		C2
22	Gaski (a) (1984)	Outline of the conceptual foundations and empirical content of the subject and areas for improvement: (a) exercised v non-exercised (potential) (b) coercive v non-coercive sources (c) dependency v sources of power (d) exercise of power v exercise of power sources (e) single force v vector force	Medium	Not ALL previous relevant studies acknowledged (non-systematic). [e.g. Wilk. 1973; K & S 1980; Frazier 1983]	Theoretical	Group A (Multiple)	Q2 Q3 Q4	66	Y		C1
23	Frazier (1984)	Basic workable conceptual framework of power which delimits the power construct (Potential-influence): (1) Highlights two fundamental groups of constructs, influence strategies, and types of achieved influence, which appear closely related to power, and (2) Encompasses authority and firm dependence as origins of power, the latter subject to feedback (achieved influence).	Medium	Reliance on limited number of succinct definitions to justify / capture meaning leading to questionable key conclusions. [e.g. Adopted Power v Influence distinction incongruent with Emerson, 1962]	Theoretical	Group A (Multiple)	Q2	68		Y	C3
24	Gaski (b) (1984)	Evidence albeit weak to suggest the higher the excess power (discrepant power) attributed to a supplier by a dealer the less conflict and higher dealer satisfaction leading to greater harmony based on a dealer's conformance ("behaves himself") to power status and less use of power by the supplier (under-estimated power level)	LOW	Power measurement inconsistency within study and across studies including question formulation (ability v inability)	Research – Theory & Policy	Social-Psychology Socio-Economics	Q2 Q3	57	Y		P

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
25	Lusch & Ross (1985)	Power in channel dyads is issue-specific and not pervasive and that sources of power create power only in specific (not all) policy areas.	Medium - HIGH	Communicative validity – that influence means power not established with respondents. [Power v Influence; relevance of coercion]	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3	68	Y		C3
26	Gaski (1986)	Empirical evidence suggests that supplier's application of reward and punishment does affect the strength of its other three power sources and these relationships exert a major influence on whatever impact reward and coercion may have on other channel phenomena such as supplier power and dealer satisfaction.	LOW - Medium	Questionable data analysis techniques and interpretation. [See Howell 1987 critique - Use of LISREL]	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3 Q4	65	Y		C3
27	Gaski (1996 [88]) First Published 1988	Research may still not have demonstrated a valid measure of power ("15 years of futility") however there are opportunities to improve measurement which merit exploration, noting also science suffers from publication bias.	Medium	Limited and high-level interpretation of power ORIGINS marginalises key conceptual distinctions raising more fundamental measurement issues.	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3 Q4	69	Y		C3
28	Butaney & Wortzel (1988)	The first to operationalise customer and manufacturer market power, providing empirical evidence in channels of distribution for electronic components of the role of customer and manufacturer power in jointly determining distributor power, finding distributors do not always seek more power and prefer diffused power structures.	LOW - Medium	Transparency in qualitative evidence / justification for qualitative interpretations, salient to argument. [Quantitative evidence ONLY]	Theoretical & Research	Political-Economics Socio-Economics	Q2 Q3	64	Y		C4
29	Cronin et al (1994)	In the context studied - role performance measures of dependency adequately account for the "availability of alternatives" dimension of dependency identified by Emerson (1962) and weighted performance measures offer more accurate representation of power relationships, pointing to the need for a thorough and systematic research into measurement issues (including conclusions)	LOW - Medium	Communicative validity – Respondent interpretation and judgement of pay-off.	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3 Q4	69	Y		C4
30	Gaski (1994)	This paper extends Dahl's framework of power to portray the construct of power in three-dimensional space and stipulates that there is no such thing as unsuccessful power.	HIGH	Validity of theory extension [versus resolution] for an acknowledged contentious concept.	Theoretical	Social-Psychology Socio-Economics	Q2 Q3	71	Y		C4
31	Frazier & Antia (1995)	Power can lead to various behavioural changes, undesirable OR inherently desirable, and can worsen relationships OR enhance relationships, and thus should be recognized more broadly (open) for its potential positive effects in both symmetrical and asymmetrical relationships.	Medium	Questionable inferences and comparisons made between (basic) power definitions. [Influence v Control; Strategic decision variables v beliefs, attitudes, and behaviour].	Theoretical	Social-Psychology Socio-Economics	Q2	72	Y		C4

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
32	Brown et al (1995)	Evidence that direct measures appear to reflect the sources of power better than the indirect measures, however several conceptual and operationalisation issues require addressing to truly enhance knowledge of power in channels.	LOW - Medium	Acknowledged conceptual and operationalisation issues surrounding the basic measures (direct; indirect) under study precludes drawing meaningful comparative conclusions.	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3 Q4	78	Y		C4
33	Zemanek & Pride (1996)	Posit that the manufacturer's salespeople are much more than "boundary personnel" and could be an important and separate source of power in the marketing channel.	Medium – HIGH	Assumed respondents discriminate fully between salesperson and organisation. [Reported power intercorrelation coefficient = 0.756; salesperson sub-set v distinct from manufacturer?]	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3	63	Y		P
34	Stannack (1996)	A purchasing and supply chain management model of power, embracing its complex and multidimensional nature.	Medium - HIGH	Intent (desired outcomes) as a pre-requisite excludes non-desired outcomes from power.	Theoretical & Policy	Group A (Multiple)	Q2	74		Y	P
35	Lane & Bachmann (1997)	Interaction Power is more likely to function as an alternative mode of co-ordinating social expectations and interaction when the institutional framework and the embeddedness of social interaction is weak, but power produced by a comprehensive and stable institutional environment what we call system power appears to foster the production of trust rather than being detrimental to it.	Medium- HIGH	Absence of a clear substantive definition of both power and trust. [Power and trust as mechanisms / means]	Theoretical & Research	Political-Sociology Political-Economics (New Institution)	Q2	71		Y	E
36	Zemanek (1997)	Factor analysis and varimax rotation conducted on empirical data measuring manufacturer and salesperson power clearly show that different questionnaire items make up the domains of a manufacturer's sales-person power and manufacturer power.	Medium	Data analysis reliability - Study raw data is the same as Zemanek & Pride (1996) and apparently adopting a different analytical method produces different analysis results and findings without explanation (across studies). [e.g. Power measure means]	Research – Theory & Policy	Social-Psychology Socio-Economics	Q2 Q3	60	Y		P
37	Yavas (1998)	Caution against heavy reliance on Western measures and propositions, and their transportability to non-Western contexts or channels that transcend national borders (neither coercive v non-coercive power is necessarily related to conflict).	Medium	Impact on findings of inconsistency across studies in measurement instruments employed (range and formulation of questions). [e.g. In this study - would v could inflict punishment?]	Theoretical & Research	Social-Psychology Socio-Economics	Q2 Q3	70	Y		C4
38	Cox (1999)	See Cox (a) (2001)									E

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
39	Quinn & Doherty (2000)	Where a defined concept and brand are present, coercive sources of power, as advocated by agency theory (contract protection / enforcement), can explain power and control in the international retail franchise relationship. Conversely, where such conditions are not present, support activities, that is predominantly non-coercive sources of power, as promoted by the marketing channels literature, provide the only source of control.	Medium - HIGH	High reliance on researcher interpretation – limited empirical evidence in support.	Theoretical & Research	Socio-Economics Political-Economics (Agency Theory)	Q2 Q3	67	Y		P
40	Lister (2000)	Investigation of inter-agency partnerships must not only consider issues of power but also be carried out at several levels. It is not sufficient just to consider asymmetries of power between agencies as constraints to partnership, but the wider framework within which those agencies operate, and the mechanisms for establishing those frameworks including the use of discourse.	Medium - HIGH	Absence of case study detailed methods (interviews) and empirical evidence placing greater burden on researcher theoretical justification.	Theoretical & Research	Political-Sociology	Q2 Q3	68	Y		P
41	Kadiyali et al (2000)	Developed and applied an empirical method based on game theory to measure the pricing power of channel members, which shows that the usual games examined in the marketing literature do not hold for the given data.	LOW	Utility of the model, given assumptions, estimations, data sensitivity AND importantly all other relevant variables excluded from the model, all of which centres around pricing power, ignoring other power types.	Theoretical & Research	Economic (NEIO) New empirical industrial organisation	Q2 Q3	72	Y		E
42	Cox (a) (2001)	The power perspective' offers an analytical v descriptive understanding of the structure of power in supply chains and is the starting point for any thinking about effective procurement and supply chain management noting a wide variety of supply chains, each of which will have very different structural configurations of power.	Medium - HIGH	Account of power premised on 'economic rational behaviour' that under-explains the relevance of broader organisation goals, range of social influences, and idiosyncratic nature of human behaviour.	Theoretical & Research	Economics	Q2 Q3 Q4	71	Y		E
43	Cox (b) (2001)	**See Cox (a) (2001)**									E
44	Cox et al (2001)	**See Cox (a) (2001)**									E
45	Watson (2001)	**See Cox (a) (2001)**									E

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
46	Zemanek & Frankel (2001	Salesperson has greater <u>influence</u> over prices, order quantity and change in the composition of their product line. Conversely, the manufacturer's domain of <u>power</u> is greater over: changes to composition of their product line, customer service policy, inventory procedures, and the way the distributor displays the manufacturer's products.	Medium - HIGH	No formal reconciliation of assumption that organizations (like individuals) have a distinct personality needs / wants with notion of distinguishing between salespeople (organisation members) and organisations.	Research – Theory & Policy	Social-Psychology Socio-Economics	Q2 Q3	63	Y		P
47	Dapiran & Hogarth-Scott (2003)	In the context of UK, Australian Food Industry - a separate explanatory construct called cooperation may be counter-productive. Power is the base "atomic particle" of relationships whereby power sources and the balance of power between parties are adequate to explain behaviour.	Medium	Empirical evidence oriented towards coercion (as mediated) and expert/information (as non-mediated) power, marginalising the significance of referent, reward, and legitimate power.	Theoretical & Research	Group A (Multiple)	Q2 Q3	76	Y		P
48	Pandey & Wooldridge (2003)	Development of Gaski (1984) model to reflect a distinction between perceived, existent power and perceived, non-existent power due to information gaps and misinformation, having potential implications for long term relationship satisfaction and performance.	LOW - Medium	Claim substance requires a philosophical commitment and therefore clear ontological grounding / positioning, and an account of full <u>awareness</u> of possible gaps (both types) and non-intentional gaps.	Theoretical	Group A (Multiple)	Q2 Q3	67	Y		P
49	Zhuang & Zhou (2004)	The causal relationship between power and dependence may be culture specific THUS: (a) passive dependence should be distinguished from positive or active dependence (b) it may be questionable to use channel dependence as a tool for measuring channel power, at least IN some circumstances (c) dependency and replaceability (alternatives) should be treated as separate constructs.	Medium	Subject to definition of power (resistance <u>not</u> pre-requisite) and dependence (pure reliance; constrained), and stance extends beyond <u>cultural</u> differences. [See ORIGINS comparison]	Research – Theory & Policy	Social-Psychology Socio-Economics	Q2 Q3	74	Y		P
50	Marshall & Rollinson (2004)	Suggest that a knowledge / power lens arguably moves beyond the privileging of either knowledge (Bacon 1957 - Knowledge is Power") or power (Nietzsche - "Power is knowledge) and considers how they are mutually constituted through strategies and tactics, whereby power both acts on knowledge as well as through knowledge, thus offering a different interpretation of organization interactions than consideration of either in static terms i.e. resources possessed.	HIGH	Exposed are the various contentious issues surrounding power and moreover a work-around approach to studying power without a robust formulation of what constitutes and characterises power. [Power as strategies and tactics]	Theoretical & Research	Political-Sociology Social-Psychology (enactive sense making)	Q2 Q3	75	Y		P

No.	Author(s)	Main Claim	SIGNIF.	Limitations (Exposing Range)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
51	Welch & Wilkinson (2005)	Show how network analysis provides a fuller understanding of power and conflict in this case - how the consideration of the role and impact of connected relations and actors can alter our understanding of the relevant factors and processes at work.	LOW - Medium	Adopts narrow interpretation of what constitutes a dyadic relationship, and central premise of argument confounds / collapses rather than clearly distinguishes between perspectives (levels of analysis). [i.e. Case definition; network actual relevance within dyad]	Theoretical & Research	Group A (Multiple)	Q2 Q3	53	Y		P
52	Akpinar & Zettinig (2008)	A better understanding of factors, which potentially increase the control of Turkish automotive suppliers in their strategic decision making and four major strategies that can lead to improved power balances with OEM.	LOW - Medium	Assumptions made accompanied by significant theoretical and empirical gaps [including relational and performance based] under-accounts for any current state of power distribution and the complexity of power management.	Research – Theory & Policy	Political - Economics Socio - Economics	Q2 Q3	66	Y		P
53	Belaya & Hanf (2009)	Definitions of power resemble each other. The main conceptualisation differences stem mostly from differences in capturing power sources and consequences. Power generally refers to the ability, capacity or potential to get others do something, to command, to influence, to determine or to control the behaviours, intentions, decisions, or actions of others in the pursuit of one's own goals or interests despite resistance, as well as to induce changes.	LOW- Medium	Non-critical and non-systematic evaluation of extant theory.	Theoretical & Policy	Group A (Multiple)	Q2	71	Y		P
54	Belaya et al (2009)	Power is a multidimensional concept therefore it seems necessary to develop measures that account for different power dimensions and such measures could include at least the aspects of dependence, sources of power, power over and power to.	LOW - Medium	Under-exposed range of measurement challenges and under-explained range, significance, and complexity of relevant dimensions (including relationships between dimensions), in attempts to measure power.	Theoretical	Group A (Multiple)	Q2 Q3	64	Y		P
55	Dörrenbächer & Gammelgaard (2001)	Four genuine types of subsidiary power are identified, micro-political bargaining, systemic, resource-dependency, and institutional, where micro-political bargaining plays a subtle but crucial role, being important in the enactment of the three other types of power.	Medium	Researcher theory-laden and non-critical assessment of secondary case data that although plausible is open to challenge by alternative theories or perspectives or richer data.	Theoretical & Research	Political- Economics (Institutional) Sociology	Q2 Q3	70	Y		P

Table B-7. Extracted overview of SLR1 core studies

B.9.2 SLR 2 Core studies extracted profiles

No.	Author(s)	Main Claim	SIGNIF.	Main Utility (Alignment to SLR1 Critique)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
1	Meehan & Wright (2012)	The results support the proposition that power in buyer–seller relationships is a pluralistic concept and that extant theories focused on organizational, individual, or relational elements of power are independently too narrow in their reflections of the power construct; rather, they are all part of the same broad construct.	Medium - HIGH	Importance of: ▪ Goals explaining power sources (Relational) ▪ Dynamic, complex process (Sources) ▪ Practitioner views	Theoretical & Research	Group A (Multiple)	Q2 Q3 Q4	61	Y		P
2	Blois & Hopkinson (2013)	Paper provides the first critique of this well-established research field and argues that the extensive use of French and Raven's theory has been detrimental in limiting the conceptualisation of power that informs our understanding of the phenomenon.	Medium - HIGH	▪ F&R Theory Limitations ▪ Limitations and impact of weak empirical studies ▪ Saliency of broader conceptualisations	Theoretical	Social-Psychology Socio-Economics	Q2 Q3 Q4	78	Y		C3
3	Hopkinson & Blois (2014)	Under-conceptualization of power (power centred around French and Raven's power-base theory) has led to limitations in empirical studies relating to inconsistency of treatment, contradictory findings, and simplification of complex phenomena, raising questions about the value of the contributions made using this theory in light of broader debates about power.	HIGH	▪ Conflicting power base relationships (power, conflict, commitment, trust) ▪ Bias in negative power positioning ▪ Overall conclusions fully complement SLR 1 & SLR 2	Theoretical	Group A (Multiple)	Q2 Q3 Q4	85	Y		P
4	Hunt (2015)	Five specific criticisms raised are suspect and the power-base approach to understanding channels of distribution has provided an informative theoretical foundation for guiding research: (1) Weak results / Lack of sound measures (2) Inadequate categorising (power sources) (3) Questionable' use of an interpersonal theory (4) Misreporting' of the original article (F&R, 1959) (5) Quality of original French and Raven article	Medium	▪ Empirical studies retain some value ▪ Legitimate (base) v Legitimacy (social) distinction ▪ Appropriate reading / interpretation of studies (judgement)	Theoretical	Social-Psychology	Q2 Q3 Q4	50	Y		C4
5	Blois & Hopkinson (2015)	Criticisms raised remain valid and are rightly directed at drawing attention to identified limitations without suggestion that all work completed to date is of no value.	Medium - HIGH	▪ Value in critical examination of seminal works ▪ Correct application of inter-personal theory	Theoretical	Group A (Multiple)	Q2 Q3 Q4	78	Y		P

No.	Author(s)	Main Claim	SIGNIF.	Main Utility (Alignment to SLR1 Critique)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
6	Hingley et al (2015)	Identified the most likely future emphasis of theory and practice in industrial and business markets based on 5 identified key themes linking the origins of power research through to its current focus in this field as: (1) Understanding of power in the inter-personal context applied to business relationships (2) Symmetry/asymmetry - realities and implications (3) Accuracy of power measurement (4) Analysis within and beyond dyadic exchanges (5) Contemporary contexts offering rich material to understand power	Medium	▪ Origins as rooted in inter-personal context and remain under evaluation ▪ Accuracy and appropriateness of power measurement ▪ Relevancy of current themes TO proposed theory	Theoretical	Group A (Multiple)	Q2 Q3 Q4	70		Y	P
7	Kraus & Strömsten (2016)	Extend current literature on firm control to inter-firm control and expose how it is more the combination and intricate relationship between resource, process and meaning power at both strategic and operational levels that is key for understanding the dynamics between internal and inter-firm control.	Medium - HIGH	▪ Introduces 'Meaning Power' (saliency of sense-making) and Process Power ▪ Strong inference that Power IS a process delivering significant outcomes ▪ Adoption of process perspective / approach to data collection / analysis.	Theoretical & Research	Group A (Multiple)	Q2 Q3	71	Y		E
8	Reimann & Ketchen (2017)	Scholars are beginning to explore many of the complexities surrounding power relationships pointing to a proposed research agenda based on: (1) What (Types of Power / Mediators)? (2) Who (Internal Levels)? (3) Where (Network Position)? (4) Why (Value Appropriation v Collaboration)? (5) When (Temporal impacts)? (6) How (Configurations)?	Medium	▪ Reportedly established meaning of power ▪ Fundamental concept differences remain hidden ▪ Power complexity, embeddedness, methodology issues ▪ Saliency of perspective ▪ Relevancy of current directions TO proposed theory.	Theoretical	Group A (Multiple)	Q2	70	Y		P
9	O'Brien & Evans (2017)	This study demonstrates how distinguishing between asymmetry and mutual dependence when using an RDT lens provides a better understanding of how resources inform NGO partnerships and a better view of the contradictions and challenges inherent to civil society partnerships.	Medium - HIGH	▪ Relevance of sustainability (economic, social, environment) ▪ Nuances of power ▪ Distinction between asymmetry and mutual dependence (theory transfer)	Theoretical & Research	Group A (Multiple)	Q2 Q4	64	Y		P

No.	Author(s)	Main Claim	SIGNIF.	Main Utility (Alignment to SLR1 Critique)	Literature Type	Theoretical Perspective	Main SLRQ	Q. Score %	SEARCH	Reference	Centrality
10	McNamara et al (2018)	Evidence that despite being resource needy, social ventures can create mutual dependence and successfully offer their external partners access to valued outcomes, elaborating a dynamic theory of resource mobilization as encompassing six distinct soft-power tactics employed by social ventures, contingent upon resource providers' level of support to the social cause and the maturity of the relationship with them.	Medium - HIGH	▪ Mediation of non-coercive power ▪ Equitable v Egalitarian benefits distinction ▪ Power generation ▪ Power as a process ▪ Distinction between asymmetry and mutual dependence (theory transfer)	Theoretical & Research	Group A (Multiple)	Q2 Q3	63	Y		E

Table B-8. Extracted overview of SLR2 core studies

B.10 Core studies detailed findings

B.10.1 Power definitions employed

Origin	General Definition (Expression)	Study
Emerson (1962)	**Category B** '"Emerson (1962) viewed **power as the potential to influence.** He proposed that the **basis for one party's possession of power lies in the other party's dependence on the relationship or its need to maintain the relationship to achieve desired goals**. French and Raven (1959) identified **five bases of power**..."'	Zemanek *and* Pride (1996) p.21
Simon (1953)	**Category C** "Power, in its most general sense, refers to the **ability of one individual or group to control or influence the behavior of another**" (Hunt and Nevin 1974, p. 186). The power of one social actor (e.g., channel member i) over another social actor (e.g., channel member J) is **determined by the power sources** available to the former (El-Ansary and Stem 1972; **Simon 1953**)."	Lusch *and* Brown (1982) p.312
Barnes (1988) [Berlin (1957)]	**Category D** "In short, we can say that power is the ability to **control one's own** or another entity's range of **intended or actual actions**."	Stannack (1996) p.49
Porter (1980) Hamel *and* Prahalad (1990)	**Category D** "Toyota model is ultimately based on a transformation in the **structure of power** in the automotive supply chain, through the creation of **hierarchies of structural dominance**. A hierarchy of structural dominance **refers to a situation in which there is a dominant player within a supply chain,** who is **able to own and control the key resources that appropriate value**... dependent suppliers **(supplicants),** who provide no threat to the flow of value appropriation and **must pass value to the dominant player**."	Cox (1999) p.172

Table B-9. Sample of power definitions employed by IOR studies exemplified.

Analysis of power definitions revealed the first time Dahl's definition is strictly adopted is by Lister (2000) albeit a broader perspective of power was thereafter embraced. Lusch and Ross (1985) are first to quote F&R's power expression but without qualification that it effectively stood as independent power as distinct from other power definitions also quoted. Beier and Stern (1969) are first to adopt Emerson's dependence definition and although recognising the definition to be less general than Dahl's definition, interpret the definition as drawing attention to commitment and alternatives. This may in part explain attention thereafter given to commitment and stake as more representing dependence in the IOR context (El-Ansary, 1975). Lusch (1977) is first to recognise Emerson's more direct

definition based on overcoming resistance (Chapter 2, Section 2.5.3.1) however interprets this definition to be consistent with Dahl's reportedly typical definition, employed in channel distribution research, "the ability of channel member A to control the decision variables of B" (p.362). Standing apart, Simon's power definition is not quoted directly only drawn upon to justify the use of the term influence rather than '*stipulate*' in a questionnaire given "it was felt 'influence' was more representative of the concept of power (Simon, 1953 p.503)" (Lusch and Ross, 1985 p.44).

Thus, Origin definitions are sometimes strictly quoted (category A), but theoretical underpinnings not necessarily fully embraced. Furthermore, as selected examples show in Table B-9, Origin definitions intentionally or not are also modified, altering meanings that either remain comparable (category B), or not (category C). Some studies embrace definitions from other sources (category D).

One exemplified category B definition reformulates Emerson's dependence based definition to, A's potential to influence derived from B's "dependence on the relationship or its need to maintain the relationship to achieve desired goals" (Zemanek and Pride, 1996 p.21) that whilst comparable, under-emphasises the significance of resistance and correspondingly constrained versus elected dependence, especially through a further cursory linkage to F&R's power bases.

One category C definition (Lusch and Brown, 1982) aligns with Dahl's definition, but thereafter appeals to Simon in following El-Ansary and Stern (1972), to state that, A's power is determined by power sources *available* to A. Conceptual links between Simon and Dahl were are implicated but the distinction between actual versus exercised influence ignored. Simon also more accurately referred to *conditions* or "characteristics of individuals and situations" (p.507) as bases. These bases could *only* be used to predict influence if they had already been *validly* established and the *situation* was stable, that is "if wealth is the principal influence base in a particular situation - the principal means for exercising influence - then in that situation we may measure influence indirectly by wealth" (p.507). Such precision in Simon's theory is largely overlooked.

Turning to one example of a category D definition employed, is rooted in Barnes (1988) and in turn Berlin (1957), "power is the ability to control one's own or another entity's range of intended or actual actions" (Stannack, 1996 p.49) subtly aligning with both Dahl (intended) and Simon (actual) emphasising a processual view (intended and actual). Important also, introduced is the sense of power-to referring to the self, not only others, and that it concerns control, not mere influence of actions.

Thus, power definitions employed are varied. Origin definitions also did not fully capture the essence of the concept as intended yet were used and modified to promulgate the meaning of power. Salient distinctions between the Origins were marginalised or remained undetected. The most comprehensive definition offered sought to integrate identified perspectives of power:

> "Power generally refers to the ability, capacity or potential to get others to do something, to command, to influence, to determine or to control the behaviours, intentions, decisions or actions of others in the pursuit of one's own goals or interests despite resistance, as well as to induce changes, to mobilize resources, to restructure situations, and so on."
>
> (Belaya, Gagalyuk and Hanf, 2009 p.169)

Embraced is power-to *and* power-over, consensual *and* coercive power, that power is goal driven, and concerns broader outcomes. Nevertheless, the definition remains subject to interpretation in whether exercised influence is incorporated, and thus *power as a process*, recognised. The succinct definition is further limited to broadly capturing the *what* of power, and is not sufficiently exact to fully characterize power, leaving the *how*, and *why* questions open. As exposed in the following section, power is frequently captured as a process, in attempts to depict the how and why.

B.10.2 Process perspectives adopted

Summarily captured in Table B-10, in total 18 studies seek to represent power as a process in some form, dating from 1970 (Heskett, Stern and Beier, 1970) through to 2008 (Akpinar and Zettinig, 2008) sometimes presented to draw attention to specific process elements and characteristics (Gaski, 1984). In total 22 models are posited, characterising power differently through 10 components.

The most dominant component explicitly included in 20 models (91%) is Potential-influence (potential or actual), thereafter exercised influence that includes means and behaviour effects (13; 59%) and sources (12; 55%). Dependence (8; 36%), countervailing or reciprocal power (5; 23%), conflict (5; 23%) satisfaction (6; 27%), and feedback (7; 32%) are also reasonably prominent. Performance that reflected broader outcomes, and environment, are both the least prominent components (3; 14%).

Each model stands as unique with no two models including the same components or depicting the process in the same manner. Only six models (27%) capture a sense of inter-play (IP) between actors A and B (Frazier, 1983; Gaski, 1984; Kadiyali, Chintagunta and Vilcassim, 2000; Lister, 2000; Wilkinson, 1996), and 2 models are viewed more static frameworks (S) depicting power structures or regimes rather than dynamic models of influence sources, flow, and effects (Cox, 2001; Watson, 2001). A distinction was made between processes constructed as one-directional or linear (L), fully closed (C) where the end component feeds back to the first, or in part reflected both (LC). Across the studies the most common process type is linear (10; 45%), then equally partially closed with linear aspects (5; 23%), or fully closed (5; 23%).

Model No	STUDY	YEAR First Published	PROCESS DESCRIPTION	Page No	Fig. No.	Dependence	Sources	Potential	Exercised	Countervailing	Conflict	Satisfaction	Performance	Environment	Feedback	** PROCESS TYPE
1	Heskett et al	1970	Power base and Use of Power connections	86	1		Y	Y	Y						Y	C
2	Wilkinson (1996)	1973	Factors affecting the Use of Power	40	1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	IP – C
3	Brown and Frazier	1978	Power – Influence	266	1	Y		Y	Y					Y	Y	LC
4	Frazier	1983	Dependence: Development and Maintenance	159	1	Y						Y			Y	IP – LC
5	Frazier	1984	Power – Influence	67	1	Y	Y	Y	Y						Y	C
6	Gaski	1984a	Power directional relationships – range of variables	14	1	Y	Y	Y	Y	Y	Y	Y	Y		Y	IP – LC
7	Gaski	1984a	Effects of Exercise and Non-exercised power	22	2		Y	Y	Y		Y	Y				L
8	Gaski	1984a	Exercise of power and power sources	24	4		Y	Y	Y							L
9	Gaski	1984a	Power and Countervailing power	26	6		Y	Y		Y					Y	IP – C
10	Gaski	1984b	Causal relationships (power / conflict / satisfaction)	51	1			Y			Y	Y				L
11	Gaski	1986	Causal relationships (across bases / development / exercise)	64-65	1-2		Y	Y	Y							L
12	Gaski	1986	Causal relationships (bases / power / satisfaction)	72-73	5-6		Y	Y				Y				LC
13	Gaski (1996)	1988	Factors influencing net power	66	6		Y	Y		Y				Y		L
14	Frazier and Antia	1995	Power – Control	325	2			Y	Y							L
15	Lister	2000	Resource flows	233	1	Y										IP – L
16	Kadiyali et al	2000	Market Power – Pricing	131	1-2			Y	Y							IP – C
17	Cox [Cox 2001]	2001b	Janus faced dominance	12	5			Y	Y	Y						S
18	Watson [Cox 2001]	2001	Upstream / Downstream power regimes / dependence	37-39	1--4	Y		Y								S
19	Pandey and Wooldridge	2003	Existent and Non-Existent Power	73	2		Y	Y	Y		Y	Y				L
20	Dapiran and Hogarth-Scott	2003	Power and Trust	264	2			Y	Y							LC
21	Zhuang and Zhou	2004	Power-dependence causal relationships	685-688	1-3	Y		Y								L
22	Akpinar and Zettinig	2008	Power Determinants	150	2	Y		Y								L
	Totals					8	12	20	13	5	5	6	3	3	7	

** 'L' = linear *input-output* process   'C' = complete *circular* or *closed loop* process   'LC' = distinct *linear* and *circular* process elements

'IP' = captures inter-play between actors   'S' = *static* framework

Table B-10. Process based models developed by IOR studies

The title description accorded to each model reflects what each model sought to explicate and ranges from capturing the different effects of employing coercive versus non-coercive power bases (Gaski, 1984), relationships between power bases (Gaski, 1986), to the impact of perceived but non-existent power (Pandey and Wooldridge, 2003). Comprehensive models are offered by Frazier (1984), and Gaski (1984), yet the former does not capture the inter-play or reciprocal A-B power relation nor a sense of outcomes broader than induced behaviour, and the latter does not capture the subtlety of the approach or means of exercising power, as strategies. Neither model explicitly gives relevance to the environment (other relationships). Both models (Frazier, 1984; Gaski, 1984) are to some extent underpinned by an intricate model offered by Wilkinson (1996 first published 1973) reproduced in Figure B-16, although not referenced directly by either study or any other core study offering a process model.
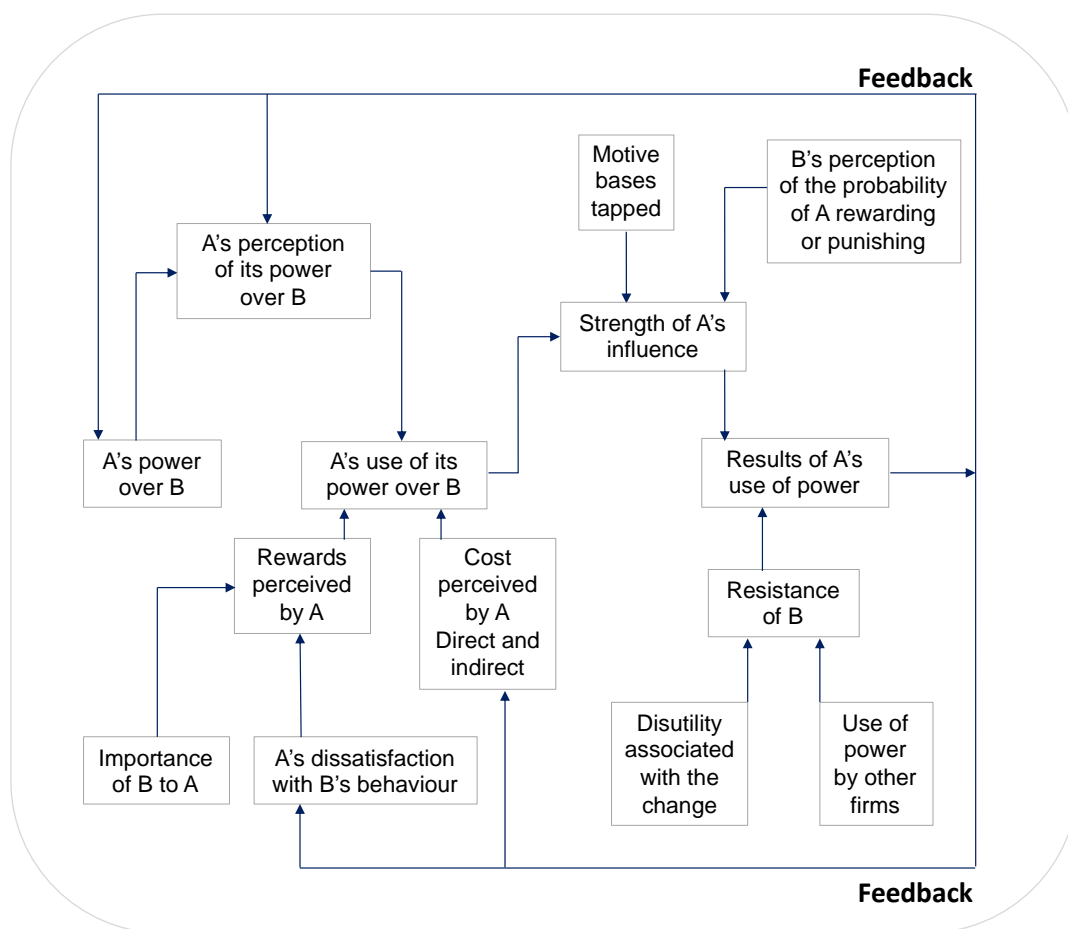
Figure B-16. Wilkinson (1996 [1973]) process model (reproduced)

Wilkinson's model attends to the environment for B in recognising the 'use of power by other firms' albeit not explicitly for A and draws attention to relevant *psychological* factors of both A and B, to explain how and why A may use A's power over B, such as 'A's perception of A's power over B' (Potential-influence), and 'resistance of B' (conflict). These and other components such as 'results of A's use of power' (effects / performance) relate in some manner to all explicit process components identified across studies.

Notwithstanding, the model represents power-*over* and does not fully account for reciprocity or countervailing power, that is B's power over A, although did recognise the 'importance of B to A' (dependence) as part of A's decision to exercise power (rewards or punishment) and indirectly, use of power by other firms. The model also does not fully capture the sense of *joint* power-*to* but sought to portray how A's power use, should be judicious and effective, to promote A's future *"power to act"* (p.40) given power may not be *useable* without undue cost.

Despite the differences between models, that power is recognised to be in some manner integral to *a* process, or *exist as* a process, pointed to power being recognised as a multi-dimensional construct and the importance of establishing a process model to complement the preliminary conceptual framework in defining power. This leads to providing an overview of the range of dimensions operationalised by core studies seeking to determine power.

B.10.3 Power dimensions (measures) operationalised

Corresponding with Potential-influence being the prominent process component (Appendix B.10.2) and Dahl's *actual* power being the dominant power state of interest since inception (Beier and Stern, 1969) and first attempt to measure power (El-Ansary and Stern, 1972), actual power was positioned as *power*, for analysis purposes. This permitted aligning what were variably held as direct and indirect measures of different power states. Figure B-17 captures a synthesis of all identified dimensions employed organised thematically as either *primary*, that is embraced as representing the essence of power, or *relationship* in relating to relationship features of relevance, or *environment* in capturing its relevance to the focal power, and lastly *perspective* adopted, as not strictly independent dimensions, rather indicating the view-point taken of power. The distinction was also made between dimensions determined quantitatively versus qualitatively. Evolution in the specific details of dimensions, such as Likert scales employed is provided in S-Appendix LR-4.

The synthesis exposed first that at least 31 different dimensions were held relevant to determining power. No single study however nearly attended to all dimensions suggesting that each study captured a *perspective* of power related to the focal A-B relationship(s). As captured in Figure B-17, this was further the case in terms of whether the perspective of both agents or only one agent was determined, and the level of objectivity sought and obtained.

Second, only 17 dimensions (55%) are quantified. Quantification mostly centres around primary power dimensions (14), but some studies do quantify in part linkages to the environment (Kochan, 1975), contractual relations (Hunt and Nevin, 1974), and numbers of agents (El-Ansary and Stern, 1972). The remaining dimensions are determined qualitatively and relate mostly to the broader relationship, for example type of role (El-Ansary and Stern, 1972), level of co-operation and expectations (Ford, 1980) and physical distance between parties (Quinn and Doherty, 2000). Primary dimensions such as feedback, balancing, sustainability (Quinn and Doherty, 2000) and Motive (Lane and Bachmann, 1997) are also determined qualitatively.
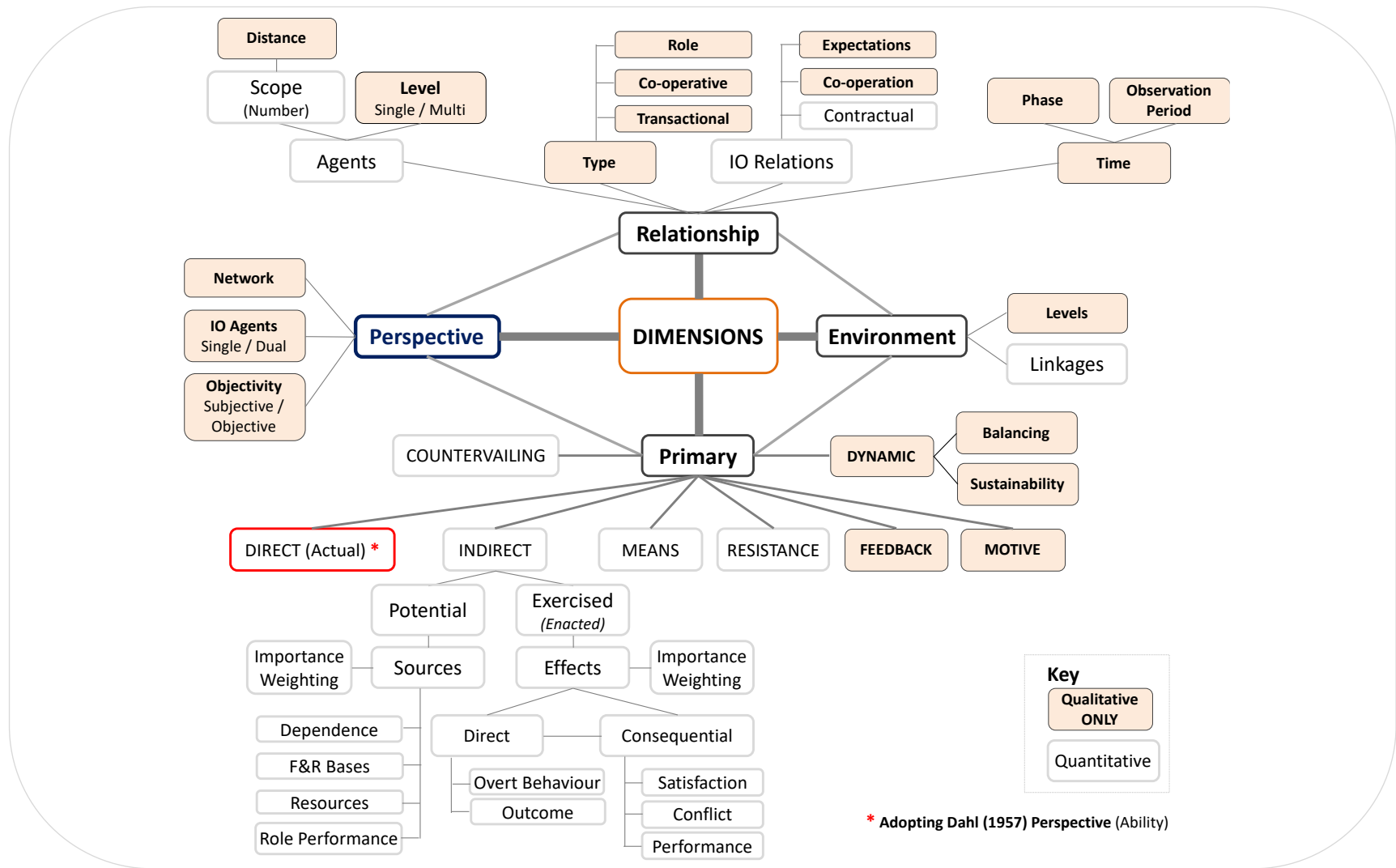
Figure B-17. Range of dimensions operationalised by IOR core studies

Third, that power held to be actual power is not measured directly but indirectly through what are considered sources, or effects of Actual-influence, is without full validation (Simon). These dimensions are variably captured, for example sources are captured as, F&R bases, dependence, role dependence, or resources, where some studies employ importance weightings to the various types of sources considered.

Fourth, and importantly, various subtle but salient differences in the *construction* of dimensions are evident on detailed examination, sometimes ambiguous, if not questionable. For example, in El-Ansary's (1975) study, questionable was how Emerson's dependence dimensions (A motivational investment in goals mediated by B; alternative sources to attain goals) are operationalised to demonstrate that Emerson's formulation of dependence did not *apply* to channels, rather dependence dimensions are *stake* and *commitment.*

Foremost overlooked was that Emerson's *constrained* dependence stood for the purpose of determining Emerson's formulation of power (overcome resistance). Second, the importance A gave to B's marketing policies that to varying degrees contributed *indirectly* to enhancing A's profit, was explicitly employed as an *index* of A's profit goal desirability level (motivational investment in goals mediated by B). Emerson's dependence formulation thereby was purposefully turned on the first dimension *from* the pure notion of A's goal desirability, that is how important to A were *profits* gained through B, *towards* the importance of how B conducts B's business (marketing policies) to contribute to (mediate) A's profits. This dimension (B's mediation) might also reflect other aspects of the relationship in specific sub-measures used to capture policies, such as, the importance of B prices charged and the importance of the nature of B's advertising, possibly capturing A protecting A's profits and reputation. This dimension was thereafter labelled, commitment. Third, Emerson's second dimension, how readily A can obtain these profits from other relationships, was turned *towards* profits gained through B and possible alternatives. This second dimension was labelled, stake.

It was not that the dimension labelled commitment was not relevant, although possibly incomplete given sub-dimensions used did not appear to fully reflect

instrumental *and* attitudinal investment (Chapter 2, Section 2.3.2.2), but rather through relabelling, what stood reasonably close to Emerson's dependence dimension was labelled, 'stake'. Notably, one study (Frazier, 1983) interpreted and used what was referred to as stake (profits gained, alternatives), as evidence of how Emerson's dimensions were *not* independent having emerged as a single factor. Implicitly assumed further was that any and all profits were equally highly desirable, and constrained dependence hinged on alternatives. This may not be the case for all actors nor for other goals and thus would strictly require a clear measure of *goal importance*.

In summary, it appeared that Emerson's dimensions were mis-represented and inaccurately constructed in support of the argument, although the argument itself not necessarily unsound that in principle points to the importance of commitment and elected dependence.

Overall, dimensions selected to determine power require close consideration, for completeness (31 dimensions identified), justification of dimension construction (variables; labelling), and clarity in the perspective adopted (network, agents, objectivity). Clarity in the power state of interest (potential; actual; exercised) is central. Clearly an early call for a conceptual structure to assimilate evidence and guide analysis of power (Heskett, Stern and Beier, 1970) had remained unanswered impeding IOR-power studies.

B.10.4 Operationalisation challenges detailed

There were 10 challenges to *quantitative* measures employed. Two related to the multi-dimensionality of power, the first being that studies treating power as unidimensional thereby under-explained power (Lusch, 1977). Second, that most developed measures did not capture all necessary dimensions and not simultaneously under-representing the interconnected nature of power dimensions (Belaya, Gagalyuk and Hanf, 2009). The issue of multi-dimensionality resonated across 3 other challenges not least in the lack of distinction between potential versus enacted states of power being determined, and correspondingly what constituted a direct or indirect measure (Provan, Beyer and Kruytbosch, 1980). Similarly, a distinction between potential and exercised influence was called for, recognising measures of exercised influence might not capture Potential-influence given power is not always effectively used, and may be acquired (Frazier, 1983). Furthermore, there was a marked difference between the two concepts and the inter-relationship was important, thus it was necessary to develop separate measures (Frazier, 1984).

Another challenge (Frazier, 1983) more broadly drew attention to several controversial issues in the range of measures employed commencing with the practice of distinguishing between a corporate strategic centre and boundary roles in organisations and whether these were separable and meaningful dimensions. Measures of comparative performance used in assessing alternatives raised further controversy in whether this should relate to an average industry standard or primary competitor or channel leader performance. Role performance used as a measure of dependence was also an issue raised in that alone it did not account for alternatives. Lastly, the utility of a measure of the absolute power of only one agent within a dyad and whether managerial recommendations could be derived given the relevance of reciprocity in IORs.

Four further challenges concerned dependence measures. Contrary to the direct challenge noted previously that Emerson's alternative dimension stood as an independent dimension (Zhuang and Zhou, 2004) was an earlier challenge that IOR studies cannot simply operationalise Emerson's two dimensions

independently (Frazier, 1983) based on the study conducted by El-Ansary (1975). The second challenge was directed towards the use of role dependency or role performance as an indirect measure of power, one of the controversial issues noted by Frazier (1983b). Role dependence was argued to stand as a proxy for F&R's reward power, and to offer no account of the remaining power bases (coercion, expert, referent, legitimate), or manipulative and countervailing power, nor other environmental factors; it was thus an insufficient measure of power (Gaski, 1996 first published 1988).

The last two challenges to dependence concerned content validity of a specific measure used in a study (Brown and Frazier, 1978), first, as possibly not reflecting the full scope of dependence in the IORs studied and thus IOR-power. Second, in appearing to incorporate a measure of conflict and thus becoming confounded with a separate conflict measure employed that might have generated spurious dependence-conflict correlations (Gaski, 1996).

Having summarised the 10 challenges to quantitative measures, three further challenges related to establishing what measures were necessary to determine IOR-power given insights from qualitative studies. Concerning both laboratory and quantitative studies, first challenged was the extent to which these study methods access the process of IOR-power (Ford, 1980). More specifically, that these types of studies did not access data about proactive and reactive behaviour in realistic situations including the mental processes of those involved, or ensure participant full engagement, or permit meaningful behaviour descriptions by participants through use of own language not researcher terms or were generalisable.

The second challenge related to attribute relationship but more fundamentally full and correct operationalisation of IOR-power. Measures of co-operation or trust were deemed unnecessary to determine the nature of relationships rather IOR-power measures that recognise IOR-power as both coercive and consensual were sufficient (Dapiran and Hogarth-Scott, 2003). Essentially, co-operation and trust or conversely capitulation and dissatisfaction (desire to exit relationship) were held higher-order constructs and products of power. Studies that did not

operationalise non-coercive based IOR-power were incomplete and misleading, and non-coercive based IOR-power was better reflected by direct measures rather than more complex, high-order measures (co-operation; trust).

The third and final challenge in part stood against the position that broader relationship constructs were *not* necessary (Dapiran and Hogarth-Scott, 2003). IOR studies that did not embrace the relevance of relationship atmosphere, that is, the level of mutual feeling between parties largely based on levels of trust and commitment, and/or did not embrace the significance of the network of relationships in which an IOR is embedded, were held to under-explain IOR-power in conflict management (Welch and Wilkinson, 2005). The relevant environment was argued to condition IOR-power and its use might be indirect.

Overall challenges to measures reflected the absence of a formally recognised, comprehensive definition of IOR-power with sufficient precision to render clear the necessary measures (dimensions) for application in IOR-power studies. This had implications for attribute measurement, as follows.

In total 8 challenges related to the process of data gathering, and a further 7 related to measurement quality. Commencing with data gathering, most explicitly and relating to all previous challenges to measures noted, was how reliability and validity of measures was held not to have been fully established to support IOR-power measurement claims (Frazier, 1983). Linked further to measures generally, was a call for greater emphasis on the quality of raw data obtained rather than sophisticated data analysis, where observations and recordings of respondent beliefs and attitudes in realistic scenarios, were central (Ford, 1980).

Recognising that IOR-power may not be exercised, the reputational approach that relies on data gathered on perceptions of IOR-power was challenged in not clearly capturing actual or exercised IOR-power (Etgar, 1976). Relatedly, given methodological issues in accessing actual power, challenged was how turning attention to measurement of exercised power emphasised strategies inferring use of power, marginalising the significant distinction between actual and exercised power (Cronin Jr., Baker and Hawes, 1994).

That non-economic sources of power, for example expertise (expert power) had been measured using self-report or attributed methods was further questioned given these sources were held to act indirectly in the power process (Lusch and Brown, 1982). Controversial issues included whether single or multiple informants were necessary, and whether data should be collected for each specific role (dependence) or on a general basis (Frazier, 1983). Validity of informant reports held to represent each organisation under study (Phillips, 1981) was viewed possibly the most serious indictment of methodologies adopted in power research (Gaski, 1984).

Turning to the 7 challenges concerning general quality of power measurement, given links to both data gathering and measures, these are more concisely stated rather than further explained.

Validity of measurements was contested given lack of alignment between a claimed established operational definition in channel studies (consensus) and measures employed, and lack of validity testing (Gaski, 1984). Inconsistency in measures was also argued echoing how measures lacked distinction between potential versus enacted states of power, correspondingly what constituted a direct or indirect measure, generating measurement ambiguity (Gaski, 1984). Third, the assumption that questionnaire data was parametric data following normal distribution and treatable as interval rather than ordinal data was challenged whereby parametric statistical analysis techniques had been mis-used (Lusch and Ross, 1985).

The measurement of non-coercive power *indirectly* as perceived quality of assistance provided (exercised) was claimed more widely used than perceptions of non-coercive power sources classified as *direct* (actual). This was first questioned given different views on which method was most effective (Brown, Johnson and Koenig, 1995). Analysis thereafter demonstrated direct measures to be more effective than indirect, further challenging that indirect methods be widely employed (Brown, Johnson and Koenig, 1995). Overall advances in power measurement were encapsulated in the following critical statement:

"Considering the significance of the construct, and the futility of 15 years of attempted power measurement, perhaps the time has come for a national academic association… to fund a crash programme to measure the vital and elusive construct of power in distribution channels definitively."

(Gaski, 1996 p.90)

The criticism that power measurement had been futile, persisted (Belaya, Gagalyuk and Hanf, 2009). In addition to measures employed being held not to capture all necessary dimensions simultaneously were further problems, first, methodological compatibility and comparability between measures also required establishing. Second, respondent bias including respondents possibly not being fully aware of influence arising, remained to be addressed. Third, that network effects including goal incongruence between organisations and networks, required greater attention. Lastly, clarity had to be established on whether indirect or direct measurement of power sources were to be employed.

The final two challenges concerned interpretation and generalisation, where first dichotomisation of F&R bases (coercive versus non-coercive) was challenged in leading to predictable conclusions, the *use* of coercive bases generated conflict, and also assumed non-coercive sources to be the same, precluding analysis of which non-coercive bases were most effective under prevailing circumstances (Kasulis and Spekman, 1980). The second, related to generalisation, and how western power measures and propositions did not automatically translate across national boundaries, most notably that coercive bases necessarily led to conflict in non-western contexts (Yavas, 1998).

In summary, despite developments in power operationalisation through engaging in empirical studies, robust measurement remains elusive. Critical accounts nonetheless point to conceptual precisions necessary to fully capture IOR-power.

B.10.5 Theory importation

In total theory importation across core IOR-studies from other contexts (level 2) related to 51 studies. As shown in Figure B-18, primarily single study direct importations (40 studies) arose contrasting with the single most referenced study, Bacharach and Lawler (1980) being referenced 4 times.
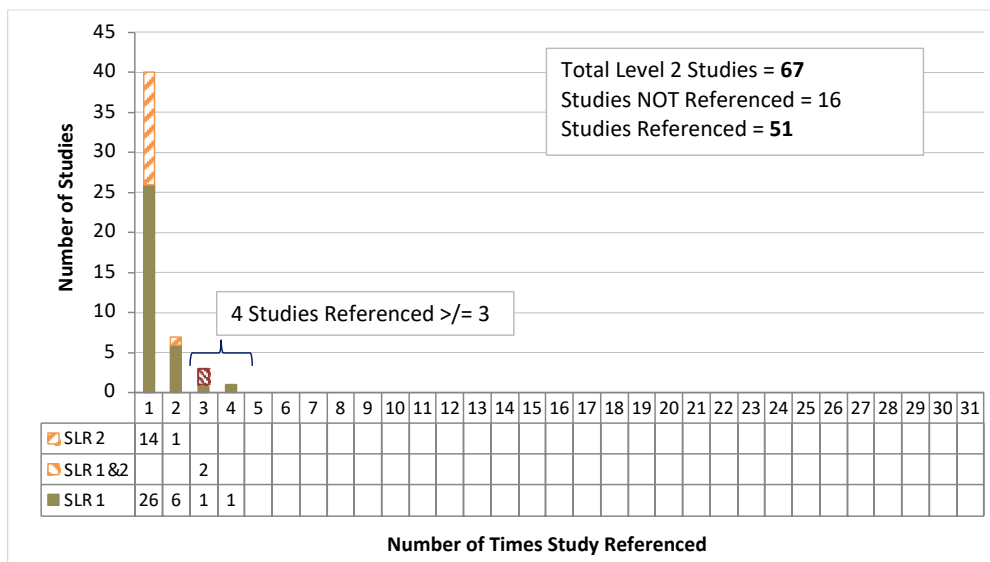
Figure B-18. Profile of level 2 studies exploited in IOR-power theory development

Table B-11 is an extract from the complete analysis (S-Appendix LR-4) exposing variability in the aspects of theory drawn upon from a sample of different contexts, but not exhaustively the organisation context (26 studies). As shown, theory importation ranges from general acknowledgment of theory as a bibliographical reference (Kahn and Boulding, 1964), to specific importations, such as non-use of power given associated costs and relevance of personal traits and conditions (Harsanyi, 1962); one of 3 studies referenced three times (Figure B-18).

Theory importations were used to constructively criticise and advance IOR-power theory in a manner that generally did not explicitly accord specific relevancy to differences in context (source versus IOR), notably in Frazier (1984 p.64) drawing attention to power being generally considered a "bottomless swamp" (Pollard, Mitchell and Beach, 1975). There were some exceptions, one being, to draw attention to certain generalised measurements of "power in the community" (Gaski, 1996 p.67) as *not* applicable to dyads in reference to Williams (1973).

	Power Theory	IOR Exploitation					SLR 1	SLR 2	Total	KEY THEORETICAL IMPORT – OTHER CONTEXTS *(Cont.)* – 51 Studies					
		1970s	1980s	1990s	2000s	2010s				Non-use of Power (exercise costs)	Perception Based (relevance)	Dimensions (same as Dahl's)	Personal Traits & Conditions (other relevant variables)	Weighting (importance of effects)	Exercise Costs (relevance)
INDIVIDUAL (6)	Harsanyi (1962)		◆—◆				3		**3**						
	Mechanic (1962)				◊		1		1	**Any Force** (resulting in behaviour change)					
	Pollard, Mitchell & Beach (1975)		◊				1		1	**General Power Definition** ("bottomless swamp" – lacks precision)					
	Kotter (1977)		◊				1		1	**Authority** (is a resource to be drawn upon – does not guarantee influence or behaviour effects)					
	Raven (1992)					◊		*1*	1	*Bases / Sources* (example – original bases specified as 6 incorrectly)					
	Raven, Schwarzwald & Koslowsky (1998)					◊		*1*	1	*Bases* (empirical studies extension and refinement)					
GROUP (3)	Shapley & Shubik (1954)			◊			1		1	**Elegant Conceptual Specification** (developed as potential; mis-specified if operationalised as exercised)					
	Karlsson (1962)	◊					1		1					**Measurement** (determining relative power and power distribution)	
	Perrow (1970)	◊					1		1					**Measurement** (semantic scales question formation – use of similar scales)	
COMMUNITY	Williams (1973)			◊			1		1					**Generalised Measurement** (in community – NOT applicable to dyads)	
ORGANISATION (26)	Dubin (1960)	◊					1		1	**Bargaining Power** (essential motivating force – brings about agreement)					
	Kahn & Boulding (1964)	◊					1		1	**Bibliography** (general)					
	Goldner (1970)	◊					1		1	**Accumulating Power** (employee relations departmental interest in gaining internal decision-making power to enhance bargaining power with unions)					

Table B-11. Import of power theory from other contexts (Level 2 studies)

B.10.6 Main claims significance and exploitation
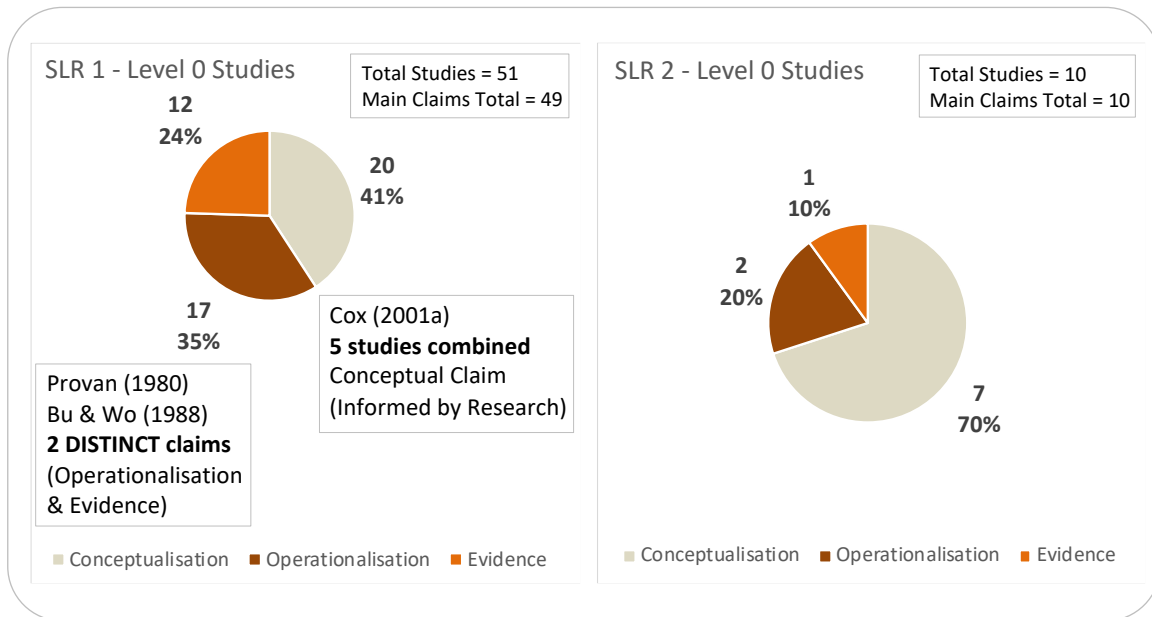
Figure B-19. Main claim profile of level 0 studies

All level 0 study *main* claims were categorised in terms of type of contribution towards IOR-power theory. As profiled in Figure B-19, SLR1 studies generated 20 conceptualisation claims (41%), 17 operationalisation claims (35%) and 12 evidential claims (24%). In comparison SLR2 studies generated 7 conceptualisation claims (70%), thereafter only 2 operationalisation claims (20%) and 1 evidential claim (10%). The SLR2 results indicated an increasing reemphasis on conceptualisation.

Mapping of the significance of SLR1 study main claims (Figure B-3) against the level of centrality or exploitation of the study (Figure B-14) is presented in Figure B-20. This revealed 13 (28%) relatively significant main claims (levels 1 and 2) with limited (C4) or no explicit recognition or exploitation (P and E) by other core studies. This contrasted with 7 (15%) central or exploited studies (C1 and C2), exhibiting relatively low significance claims (levels 4 and 5).
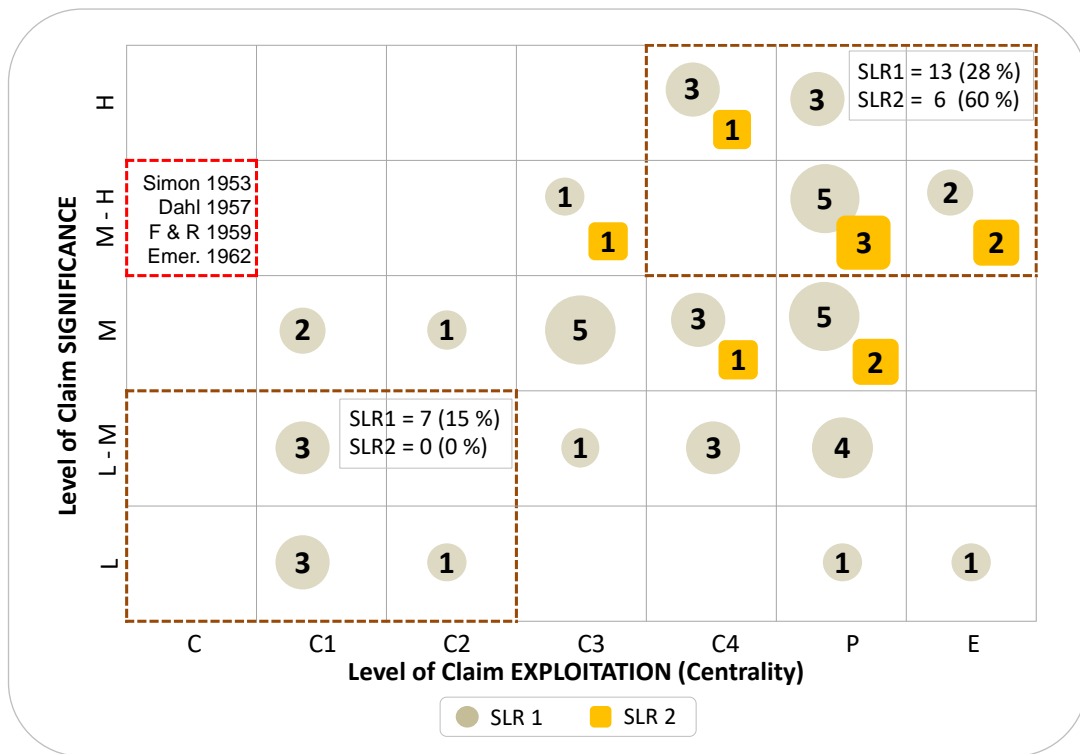
Figure B-20. Profile of main claim significance versus exploitation

The SLR1 study profile had suggested a weak theoretical core and opportunity to advance IOR-power theory that was further supported by the majority of SLR2 studies surfacing relatively significant claims, yet to be fully exploited (6; 60%).

B.10.7 Integrating IOR-power perspectives

Material divergences across the Origins summarily captured in Table B-12 initially generated the following 8 fundamental theoretical questions.

(1) Is power a *potential* or *actual* or *exercised* capability to influence behaviour of others or a process in which these are related states?

(2) Is power *coercive* influence or *consensual* influence or both?

(3) Is power grounded in the psychological processes of *individuals* and limited to discrete individual *primary* behaviour changes?

(4) Is power dependent or independent of the environment?

(5) Is power related to inducement of overt behaviour change or *covert* behaviour change or both?

(6) Is power only where the capacity to influence behaviour is *predictable*?

(7) Is power restricted to *desired behaviour* change?

(8) Is A's power-over B *separate* from B's power-over A?

Attribute	BASELINE	Simon	Dahl	F&R	Emerson
Expression (1) (2)	Governing behaviour Power-over	**Exercised** ability	**Actual** ability	**Potential** ability	**Actual** ability **Resistance** prerequisite
Level (3)	Multi-levelled Inter-levelled Embedded A-B			Actor B = **Individual** (psychological process)	
Attribution (4)	A-B relation Dependent	Independent or Dependent		Independent (ambiguity)	
Assumptions (3) (6)	Determinable Expectations			Enduring, **stable** relationships (Power predictable)	**Ideal** Groups (total unification)
Means (7)	Inducing Act			Actor A **passive**	
Motive (7)	Reason Intent				
Effects (3) (5) (7)	Behaviour Consequences			**Primary Covert** behaviour	Positive power (**desired** effect)
Connectivity (3) (4) (6)	Primary Bases Environment Consequences			Excludes **environment** Primary effects	
Reciprocity (8)	A power-over B B power over A	Anticipated Reactions		Conceptually **separable**	

Table B-12. Fundamental material theoretical divergences across Origins

Attribute	BASELINE	Dominant IOR Perspective	Marginalised IOR Perspectives	IMPLICATIONS ++ Critical
Expression	Governing behaviour	Power-Over (control – coercion)	• Governing outcomes • Power-To (consensual) • Enacted – Emergent	Process (self – other – joint) Resistance ?
Level	Multi-Level	Embedded IOR level	• Individual (role – person) • Environment	**Psychological Process ++**
Variable	Influence	Actual-influence (state)	• Potential-influence • Exercised Influence	**Potential – Actual – Enacted ++** (3-state process)
Attribution	Relational	• Relationship property • Dependent (embedded)	• Constituted • Independent	Partial Attribution
Assumptions	Explicit – Implicit Conceptual	• Ideal organisation • Determinable	Non-ideal (power mix)	**Limiting Assumption ++**
Relationship	Focal Agents (A and B)	• Enduring (assumed) • Type (role – goods)	• Changing • Unique (atmosphere)	**Comparable Relationships ? ++**
Dependence	Functional (goal attainment)	• Constrained • Resources – Roles	• Elected (sought) • Commitment	Mutual Dependence
Sources	Origin	• Focal relationship • F&R bases (dichotomised)	• Contested (perception) • Environment	Conditions
Means	Inducing Act	Method	• Learning - Feedback • Passive – In-action	Historically Rooted
Scope	Limits Comparability	• Effects (specific / pervasive) • Role relationship – Industry	• Distance • Unintended effects	Physical Environment
Amount	Units TBA	Comparable (more – less)	• Useable (effective – costs) • Sustainability	**Measurable ? ++**
Effects	• Behaviour • Consequences	• Desired / Success • Overt (decision)	• Broader outcomes • Covert (attitude – meaning)	**Outcome Limits ? ++**
Objectivity	Real (exists)	Perceptions	Non-existent power	**Philosophical Grounding ++**
Motive	• Reason • Intent	Strategies and tactics (when – means)	• Passive (non-intentional) • Individual level • Coercion - obligation	Negotiated (individual)
Time	Phase	Discrete	• Period • Reactive v Proactive	Perspective In Time
Connectivity	Primary (behaviours)	• Sources – Actual-influence • Exercised – Actual	• Inter-base • Environment	Complexity (range)
Reciprocity	Bi--Directional	Countervailing	Cultural	**Mutuality ++** (cohesion)
Asymmetry	Imbalance	• Actual-influence • Balanced = NOT power	• Exercised influence	Power v Influence ?
Dynamic	Transient	• Broadly stable • Estimable (more – less)	• Situational (shifts) • Emergent (conditions)	Defies Analysis ? (predictability)
Transparency	Obscured (varying levels)	Indicators (indirect)	• Social v Natural • Consensus v Conflict • Formal v Informal	**Adopted Perspective ++** (theory laden)
Operational Definition	Specific (adapted)	Study purpose	General	Inconsistency
Measures	Representative	Indirect	Multi-dimensionality	Context bound (incomplete)
Measurement	Methodology	Quantitative data (single informant)	• Environment • Qualitative - Observation	Quality
Interpretation	Evidence	IOR level (single informant)	• Validity (data – obscurity) • Temporal significance	Theory Laden
Generalisation	Context	Relationship type (Role – goods)	• Data base (consistency) • Theoretical lens	**Explanatory Theory ++**

Table B-13. Implications of integrating IOR-perspectives

Table B-13 summarises the findings of a final synthesis of key contestations across attributes and perspectives in the IOR-context. In principle, differences are resolvable through relaxing conceptual limits set by either dominant or marginalised perspectives, effectively expanding the meaning accorded to IOR-power to accommodate both perspectives. For example, that resistance is a prerequisite of power (dominant) or that it is not (marginalised), is resolvable by embracing resistance as not a prerequisite, but that it may be present and relevant. The basis for permitting this type of integration lies in there being no valid argument identified to justify either perspective take precedent (Bhaskar, 2008; Isaksen, 2016) and adopting the broadest perspective does not preclude delimiting IOR-power for research or practice reasons, rather forces clarity and rationale for doing so. That power be held to carry the same sense in the social world as energy in the natural world (Russell, 2004) more suggests a broad perspective is appropriate and necessary.

Notwithstanding, aligned to the most relevant attribute, are noted implications of integrating IOR-perspectives where a critical perspective (++) identifies certain implications require further theoretical development to obtain *meaningful* integration and that important practical implications require duly acknowledging. Necessary theoretical developments primarily centre around the 8 consolidated theoretical questions unearthed from comparative analysis of the Origins. Collectively these questions capture in the IOR context a *hard* conceptual interface between dominant and marginalised perspectives requiring formal or structured integration. The following thus broadly explains the roots of the critical theoretical questions (CQ) listed in Chapter 2, Section 2.5.4.5 (Table 10) requiring resolution for meaningful integration, using the 8 Origin-based questions as primary anchor points (Table B-12).

(1) Is power a *potential* or *actual* or *exercised* capability to influence behaviour of others or a process in which these are related states?

The dominant perspective was IOR-power stood as Actual-influence. To accommodate exercised influence and more explicitly IOR-power as a process, required attribute expression to capture power as a *process* rather than a state.

As a process, it was also not limited to power-over rather embracing marginalised perspectives, a process relating to both the self and others in terms of power-*to* obtain outcomes. Potential-influence (F&R formulation) as a *distinct* potential power state had also not been formally recognised. This generated the first critical question (CQ) aligned to attribute variable formulated as follows:

> CQ1: How to **reconcile** yet retain distinction between potential, actual, and exercised power **states** in a power process?

Relatedly, inconsistent terminology prevailed whereby conceptual inseparability or alignment between sources and dependency required resolving. This generated a second linked critical question:

> CQ2: How are sources, bases, and dependence **reconcilable**?

(2) Is power *coercive* influence or *consensual* influence or both?

The dominant perspective was that IOR-power stood as coercive influence but IOR-power as consensual influence had gained support. The implication of integration was that resistance as a *prerequisite* no longer stood, but not that it was unimportant in IOR-power studies. Resistance remained significant in IOR-power analysis. Correspondingly, for attribute dependence both constrained and *elected* dependence stood as relevant. Aligned with a process capturing power-to, *mutual dependence* thereby also gained saliency as a critical implication for attribute reciprocity. *Mutuality* thus required formalising in accounts of inter-dependence not merely countervailing power emphasised by the dominant coercive power-over perspective. A critical question thus ensued:

> CQ3: How to account for **mutuality** (cohesion) in IOR-power?

Furthermore, reciprocal asymmetry in *coercive* power (power advantage) being considered necessary for IOR-power and used to distinguish power from influence, thereby loses theoretical grounding. It was necessary to render clear an appropriate alternative distinction between *power and influence*, in reconciling power states (CQ1).

(3) Is power grounded in the psychological processes of *individuals* and limited to discrete individual *primary* behaviour changes?

Power generally was not denied being multi-levelled or inter-levelled rather emphasis was given to capturing power at the IOR level relying on an assumption that organisations were ideal. Marginalised perspectives nevertheless drew attention first to organisation members in roles, as unique persons, whereby cognitive processing notably forming perceptions and sense-making by these individuals was salient to how influence as a process arises and thereby any account of IOR-power. Second, that IOR-power might be contested, emerging as a power-mix within and across organisation boundaries. Organisations were thus not necessarily held ideal, exhibiting unified behaviour. Two linked critical questions followed to obtain integration. The first question related to attribute level, and the second, assumptions:

CQ4: How is IOR-power grounded at the **psychological process** level?

CQ5: How to conceptualise IOR-power without recourse to the questionable **limiting assumption** that organisations are ideal?

(4) Is power dependent or independent of the environment?

The relevance of the environment was also not denied rather the dominant perspective was that IOR-power was *dependent* power, recognising IORs to be embedded in networks and markets. Marginalised however was full account of the implications of the environment across several attributes. The first related to sources, where both complexity and stability of the environment were generally under accounted for. The full weight of *conditions* for influence, not merely recognisable sources, was necessary to explicate power. Correspondingly, without accounting for the environment, attributing power as a property of a focal relationship was only *partial attribution* and might be misleading if the environment stood as the major source of influence. The third related to means and relationship, where effective communication and monitoring may be impeded by physical distance or physical obstructions between parties. Overall, IOR-power as a state or process (CQ1 and CQ4) needed to appropriately capture the relevance of the social and physical *environment*.

(5) Is IOR-power related to inducement of overt behaviour change or *covert* behaviour change or both?

The dominant perspective of IOR-power emphasised overt behaviour as the main effects of IOR-power notably formal decisions but did not deny the relevance of covert behaviour in terms of satisfaction or a sense of conflict as consequences of IOR-power. Marginalised nonetheless was accorded relevance to covert behaviour in how meanings and attitudes were continuously formed and negotiated. Moreover, relevant power *outcomes* included performance of collective activities or the productive capacity of organisations including the use of equipment and natural resources. IOR-power effects were thereby not strictly limited to direct induced behaviour and raised a further critical implication:

CQ6: How are IOR-power effects and **outcomes** to be defined and **limited** in an IOR-power process?

(6) Is IOR-power only where the capacity to influence behaviour is *predictable*?

Based on the dominant view of power as actual power, *theoretically* power by definition was predictable, that is actual power was an ability to obtain a desired behaviour change that could be exercised at will. Actual power, in practice, nevertheless was recognised to be not directly observable and only estimable, thus predictability rested on how estimable actual power was. Accommodating marginalised perspectives where power was situation dependent, negotiated, and emergent, pointed further to the saliency of the *environment* and *psychological processes* of relevant individuals in estimating *all* power states. Implications extended across several power attributes but centred on how dynamic power states were in practice, and whether IOR-power *defies analysis sufficient* to warrant predictions. Thus IOR-power might or might not be reasonably predictable across all states.

Relatedly, recognising the possible extent of differences in IO relations *across* IORs and how the prevailing atmosphere of an IOR might alter based on the use of coercive power, a critical question concerning power comparability emerged:

CQ7: How to obtain valid **comparability** between IOR agents or rather relationships?

(7) Is IOR-power restricted to *desired behaviour* change?

The dominant perspective was that power concerned obtaining desired behaviour and outcomes aligning with IOR-power as actual power. Marginalised, but acknowledged was that power might also be passive inhering in structures and situations. Integration required embracing that the means and motive of A, was not necessarily implicated in IOR-power and that IOR-power was grounded in the psychological processes of B. Furthermore, what might be deemed desired behaviour given by prevailing structures or situations might not be necessarily fixed or shared; it might not be understood or be contested. The critical implication thereby was ascertaining what is desired and by whom. This linked to the complexity of establishing what stands as IOR-power outcomes (CQ6) alongside embracing IOR-power as both coercive and consensual (CQ3), and thereafter attributing power (CQ1 and CQ4).

(8) Is A's power-over B *separate* from B's power-over A?

Although inter-dependence, balancing processes, and countervailing power were all recognised, the dominant perspective rested on IOR-power arising as either A's power-over B or B's power-over A, in a given situation. Marginalised was the more nuanced formal and informal negotiation between parties whereby both power forms (A's power-over B; B's power-over A) might be viewed as interacting in an emerging process or enacted rather than given and exercised at will. This again linked to the complexity of establishing what stands as IOR-power outcomes (CQ6) but also emphasised the relevance of covert behaviour as a negotiation process unfolds. Through learning and feedback, attitudes and desires might shift. This had direct implications for several attributes.

Concerning attribute means, inducing acts might be *historically rooted* standing as immediate or delayed responses to prior behaviour or events. For attribute motive, strategies might emerge rather than be merely planned and executed, foremost *negotiated* and provisional at the individual level (CQ4). For attribute connectivity, not only were the various links identified across perspectives relevant, but also dynamic and included feedback. This multi-dimensionality of

IOR-power increased *complexity*, as a *state* or *process*, given meaningful characterisation of each, rested on the other (CQ1 and CQ4).

Further critical questions emerged from the theoretical landscape. First, IOR-power was predominantly theorised as an objective, measurable phenomenon, yet perceptions were deemed central to its existence. Marginalised perspectives surfaced how power might be contested and the concept of perceived but non-existent power was given credence. Ontological grounding of power thereby emerged as vague, that is, to what extent and in what manner IOR-power was dependent on the mind for its existence, pointing to a critical question:

CQ8: How is IOR-power **philosophically grounded**?

Second, and linked was how there was no standard unit of a power amount rather emphasis was given to power comparability that raised a critical question (CQ7). Marginalised perspectives also drew attention to how power might or might not be practically useable, appealing to individual and collective qualities of judgement and rationality. IOR-power was further recognised as transient, obscured, and complex. Thus the following critical question emerged:

CQ9: How can IOR-power amounts be established or is IOR-power essentially **immeasurable**?

Third, acknowledging again the complexity and obscurity of IOR-power *across* perspectives, a critical implication aligned to attribute transparency was that any given power stood as an adopted perspective, inherently *theory laden*, relying on explanations of how and why IOR-power exists, thus a critical question became:

CQ10: How to capture an **adopted perspective** and its **theoretical basis**?

Adopted perspective linked to recognising IOR-power as transient involving proactive not merely reactive behaviour, raised an implication for attribute time, that any perspective of IOR-power also stands as a *perspective in time*. This led to a final critical question concerning power operationalisation. It was evident that operational definitions were adapted and inconsistent, measures adopted were context bound and incomplete, data quality was questionable, and interpretation of evidence was theory laden without recourse to a robust generally accepted

IOR-power concept or theory. The final critical question thus aligned to the call for a conceptual structure to assimilate evidence and guide analysis of IOR-power (Heskett et al, 1970) as an *explanatory* theory (Danermark et al., 2002; Weick, 1989):

CQ11: How to obtain an **explanatory theory** that permits meaningful empirical study of IOR-power?

Appendix C Methodology

C.1 Theory development phase 1

Further methodology details are available in S-Appendix TD-1.

C.1.1 Stage 1 – Philosophical perspective

Selection of a philosophical perspective was undertaken in part based on researcher own commitment to the philosophical perspective but also based on the utility of the perspective in advancing the type of explanatory theory envisaged. Formal commitment to a dialectical critical realism perspective thus emerged at the onset of theory development, in providing the necessary ontological depth and indispensable language to think and speak meaningfully about non-observable types of psychological forces as causal powers. As will become evident obtaining integration relied heavily on embracing from this philosophical perspective, concepts of emergence, regression, and absence, to conceive how types of psychological forces posited become instantiated at the individual level, and account for the important distinction between perception and objective reality.

C.1.2 Stage 2 – Psychological forces

Extensive detailed analysis work was undertaken culminating in a mathematical based explanatory framework. Given here are method principles and related conceptual advances. Foremost, the rationale followed was to utilise F&R's power theory as the baseline theory, wherein the notion of a maximum resultant psychological force is held to capture power. Through identifying significant limitations of this representation of power, key extensions necessary to embrace the remaining Origin theories were identified and resolved.

Following directly from stage 1, recognising the significance of *perception* in all Origin accounts of power as a phenomenon, the initial step was to obtain a clear distinction between perceptions integral to power and perceptions related to observation and measurement of power, across the three power states, in an extended three-dimensional measurement framework. Thereafter, to conceive of different types of psychological forces combining in a process to perform a meaningful function, it was considered necessary to establish a corresponding

theoretical *standard unit of force* that might reasonably be applied. Value*,* the importance, worth, or usefulness of something corresponds with cognitive *evaluation* processes when determining the value and thereby relevance of things. Value also accords with related supply chain concepts, value added, value appropriation, and value chain. *Value* was thus embraced as a credible theoretical unit of force to be employed, and the basic components and principles of a theoretical value measurement system were developed.

The value measurement system captures how an entity A, defined by its actual attributes, may be accorded a theoretical maximum value thereafter be generally valued differently by an individual B. Account is given to the impact of obscurity in B's evaluation of A. The system developed underpins **value resistance** as one of three types of credible psychological resistance forces relevant to explaining power, providing a means to conceive of the overall specific value across all attributes accorded to any entity by B, that is the *specific net value* of the entity.

Establishing both value as a unit of force and value resistance as a psychological force provided the basic approach to account for conceptual separability between F&R bases and Emerson's dependence, thereafter between Emerson's dependence and F&R's Potential-influence. F&R bases stand as A's attributes generally valued by B, whereas dependence is generated by the *specific* value of A's bases for the purpose of B's goal attainment that is governed by the **importance** of B's goal (motivational investment). Introduction of a further psychological force, **intrinsic resistance**, conceivably accounts for any reduction in general value given by lack of need of specifically A's bases. In this respect intrinsic resistance accounts for alternatives in Emerson's power theory.

In principle, intrinsic resistance serves the same role in F&R's formulation of A's Potential-influence over B in terms of A's *specific* relevance to B, rendering dependence and Potential-influence conceptually *in*separable. Moreover it is the formulation of each evoking the sense of a Janus view of the same state. In viewing dependence, B is facing forward to goals and then backwards towards A in terms of A's enablers and constraints to B's goal attainment. In formulating Potential-influence, B is looking forward in terms of A's enablers and constraints and looking

backwards towards goals. Following Simon's analogy (Simon, 1953 p.505), it is difficult to discern whether dependence is the mother or daughter of Potential-influence, but one begets the other. To formally align both states (dependence and Potential-influence) required simply recognising elected versus constrained Potential-influence corresponding with elected versus constrained dependence (Chapter 2, Section 2.5.3.2).

Thus, B's value resistance and B's intrinsic resistance both serve to establish the relevance of A to B, and thereby the extent to which B is functionally dependent on A and thereby may be potentially influenced *by* A. Both these types of resistance forces are distinct from the resistance Emerson refers to as a pre-requisite to power (versus influence). To establish a clear distinction the approach taken was to formalise Emerson's resistance as a distinct type of psychological force, ***behavioural resistance***. Emerson's power formulation thus became specifically that it is B's constrained dependence or A's constrained Potential-influence that yields A's Actual-influence over B, that is, A's ability to overcome B's behavioural resistance.

Notwithstanding, a key limitation of F&R's theory was the absence of an account of the relevance of the environment in which the A-B power relationship is embedded albeit assumed by F&R to be stable in power terms (Chapter 2, Section 2.5.3.2). Although a basic framework was constructed explaining conceptual inseparability of sources and dependence and links to Actual-influence thereafter exercised influence, a deeper analytical model was required to obtain a structured account of the ***environment*** in ***psychological force*** terms, to formally reconcile state differences across the Origins. This leads to stage 3 of theory development.

C.1.3 Stage 3 – Comparative analysis model

Continuing to utilise F&R's power theory as the baseline theory, key detailed extensions necessary to encompass all three states were captured in specific psychological force terms according with the principles of the value measurement system and explanatory framework developed in stage 2. Thematically, discrete forces emerged in steps taken to establish A and B as individuals, qualify A and B behaviour, qualify relevance of the environment, recognise relevance of self-motivation, incorporate behavioural resistance, and lastly explain an induced discrete behaviour, that is formally integrate all forces into a dynamic comparative analysis model. In principle the model captured a range of psychological forces emanating internally (A-B relationship) and externally (other relationships), as vectors, that resolve along a dimensional plane representing the reciprocal influence relationship arising between two individual A and B, inducing behaviour (demands, responses) towards goal attainment. Figure C-1 summarily captures the model developed. A full account of the model and how the model was developed is similarly provided in S-Appendix TD-1 for reference and possible future application.

The contribution to theory development lay in first unearthing a minimum of 20 discrete types of forces that require accounting for in a theory integrating the Origins, exposing initially the complexity of integration. Second, providing a core language of reference to use in reflecting on how to formally obtain integration. Third, establishing a notional model in mathematical terms to explore the implications of explicit and implicit assumptions laid down by the Origins, thereby establishing logical links between the states. Lastly, engaging in developing the model evoked immersion into the conceptual world of the mind, to pose critical questions, engage in counterfactual analysis, and foster creative thinking such as, how power comparability across cases might be obtained using behavioural resistance as a standard measure exemplified by a specific model retrospectively developed and exposed in stage 2 (S-Appendix TD-1).

Importantly, establishing a grounded comparative analysis model permitted moving to stage 4 of theory development.

A influences B
Discrete Inducement

External FORCES

Relational FORCES

RMFB

EMFA
(ERMFA − BR-DA)

ERMFB

BRB

Internal FORCES
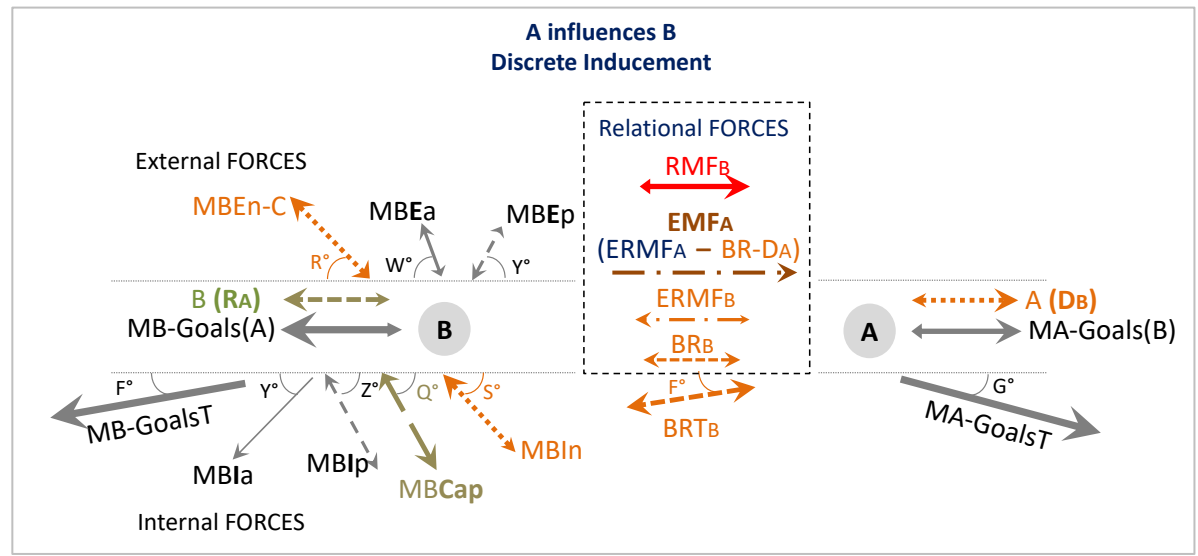
B's response [**B (RA)**] to A's demand [**A (DB)**] is thereby theoretically a behaviour of equal magnitude (*value units*)
to the magnitude (*value units*) of the resultant of all relevant forces **RMFB** (*value units*) in play *when* formulating a behavioural response:

Relational Forces		**Conditioning** Forces	
↑ Resultant Motivational Force	**RMFB**	↑ B's Intrinsic Capability Limits	**MBCap**
↑ The *effective* inducing force of A in the A-B relationship	**EMFA**	↑ B's *prior* Behavioural Resistance related to All B Goals (T)	**BRTB**
↑ A's enduring relationship inducing force	**(ERMFA)**	↑ B's new Internal Motivational Force	**MBIn**
↑ B's Behavioural Resistance generated by the manner of A's demand	**(BR-DA)**	↑ B's new External Motivational Force	**MBEn-C**
↑ B's enduring relationship inducing force	**ERMFB**	↑ B's activated alternative Internal value sources	**MBIa**
↑ B's *prior* Behavioural Resistance related to dependent Goals (A)	**BRB**	↑ B's non-activated (potential) Internal alternative value sources	**MBIp**
		↑ B's activated External alternative value sources	**MBEa**
		↑ B's non-activated (potential) External alternative value sources	**MBEp**

Figure C-1. Forces comparative analysis model

121

C.1.4 Stage 4 – Forces analyses

The purpose of stage 4 was to conduct comparative analyses to expose mathematically key conceptual distinctions and the significance of implicit and explicit assumptions embedded in each theory thereafter formally justify removal of *limiting* assumptions, that is all assumptions required to be removed, to permit meaningful integration and obtain full explanatory power. Three types of assumptions were identified, governing (2), fundamental (4), and specific (8). Where the governing assumptions reflect the dominant theorised view that power is the intended control or influence *over* the *behaviour* of others, the four fundamental assumptions capture the state distinctions across the Origins. The eight specific assumptions meriting analysis became evident in detailed analysis of core studies, for example how across the Origins, lies an implicit assumption that A's discrete demands and B's responses occur in isolation from other contemporaneous demands (at least no formal account of the implications is given), and for example explicitly how for F&R, B's power over A is independent from A's power over B and thereby B's power is given no explanatory bearing. All assumptions were tabulated recording applicability across each Origin theory, apparent grounds for the assumption, and the significance of each assumption in limiting the explanatory weight of the respective Origin theories.

The implications of the four fundamental assumptions identified were first explored. Seven basic exemplary cases were constructed representing different situations of goal alignment and mis-alignment and types and strengths of behavioural inducement and resistance forces, in which discrete behavioural demands of varying strength by A and behavioural responses by B may arise. The cases variably exposed the level of alignment between the responses obtained according to each theory. In total 21 scenarios were computed (3 scenarios per case). In computing all scenarios, patterns in alignment across the theories were analysed and documented thereafter key theoretical insights obtained, such as what might be called a tipping point, where A's demands, and B's resistance equate, leaving B's response analytically 'in the balance'. A central insight was formal identification of the unique conditions under which full alignment across states is obtained and corresponds with F&R's formulation of power under conditions of *total* dependence.

In a similar manner, the implications of the eight specific assumptions were explored. Scenarios generated to examine fundamental assumptions were selectively recomputed to capture independently the relevance of each assumption to the response obtained according to each theory. Patterns in alignment across the theories were further analysed and again documented including further key theoretical insights obtained, such as how recognising multiple concurrent demands adds a layer of complexity whereby the response obtained is not given mathematically by a simple resolution of forces rather is subject to further assumptions on how B synthesises inducing and resisting forces in play.

Lastly, to explore broadly the significance of the governing assumptions, analysis turned to considering a hypothetical, but realistic customer-supplier relationship case defined in accordance with the comparative analysis model through assigning theoretical values to the range of forces representing goals, demands, and so forth. In summary, three scenarios were examined based on the supplier engaging in either an accommodating positive response (outcome 1), an extremely negative response (outcome 2), or a constructive negotiated response (outcome 3), to six simultaneous demands by the customer. This was done drawing on experience of the way individuals acting on behalf of supplier and customer organisations behave in practice and included the possible impact on the enduring relationship. In doing so, exposed was how explanatory limits imposed variably across the Origins (or at least no formal account given) based on the governing assumptions, renders power insufficient to explain plausible behaviour and outcomes. For example that A must make an explicit demand (Dahl, Emerson, Simon) was demonstrated to under-account for the supplier's interpretation of A's behaviour, and B's resulting induced behaviour.

The findings of all force analyses conducted yielded grounds for updating the comparative analysis model to reflect how relational psychological forces identified in the original model, although comprehensive, were insufficient to explain B's responses to A's demands, that is B's *Motive*. Clearly multiple demands within a dynamic environment and B's *situated* evaluation process involving reasoning, judgement, anticipating reactions, and expectations required incorporating. In

addition, 27 specific implications for theory development were captured and documented for future reference and guidance, such as the importance of retaining the responder (B) central to the theory in recognising that *ultimately* it is the responder that governs behavioural responses. Lastly, given the significance of explanatory limitations generated by *all* assumptions, justification for removing each assumption or in part retaining an assumption for explanatory purposes (constrained dependence) was critically assessed based on the forces analyses and implicit/explicit support by core IOR studies, and summarily captured. In doing so, due attention was given to ensuring no inherent contestations or logical contradictions were thereby generated. In completing stage 4 analysis, the foundations had been laid to build the theory.

C.1.5 Stage 5 – Process model

The model was constructed in 5 steps, as follows.

Step 1 involved reflecting on the role and limitations of the preliminary conceptual framework as an *explanatory theory* of IOR-power to identify from a critical perspective features central to accommodating marginalised perspectives, summarily captured in Appendix B.10.7, for example, effectiveness (attribute amount) and emergence (attribute dynamic). In following F&R, the model was to capture such features primarily in relation to the *mental process* of an individual being induced to behave in some manner.

Step 2 concerned first establishing the essential core of the process utilising the condition of unique alignment as a formal starting point; the three states of power, potential, actual, and exercised, standing as equivalent or superimposed albeit theoretically not sustainable, if not impossible to obtain (absolute power). Thereafter, removing the condition of equivalence and given the conditions held to distinguish the states, potential power was positioned as the source of actual power, the direct source exercised power. Formal power sources thereby became sources of *potential* power, and correspondingly, power effects became the effects of *exercised* power. This five-component linear model became the core of the theory. Step 2 proceeded to the point of discerning between the three states in terms of the types of psychological forces identified in stages 2 and 4. Types of psychological forces thereby became model components as real mechanisms depicted by *broken lined* arrows. Forces positioned as acting down on core components were *principally* generating or enabling forces. Forces positioned acting upwards were *principally* constraining or limiting forces. The forces essentially acting on a component thereby contributed to generating the component, for example value resistance positioned acting upwards on sources. In total, six types of psychological forces were incorporated, first *upwardly*, value resistance, intrinsic resistance, and behavioural resistance, second *downwardly*, importance, environmental, and motive.

Step 3 focused on establishing connectivity as an indispensable property of power. First, acts by others, **Means**, were incorporated as *direct* contributions to both

effects and what constitutes sources. Given the distinction that such acts are *directly observable* by the focal individual (B) these respective forces were captured as downward *solid* arrows, signifying such acts may *physically* contribute to the respective components. As such, effects may therefore emerge as collective behaviour leading to broader outcomes, and sources may capture collective attributes. The focal individual's perception of all such acts may simultaneously contribute to inducing the individual's behaviour (indirect), notably when interpreted as a demand. Second, to reflect actual power and its *transformation* to exercised power as the most complex, embedded, and *obscured* element of the overall process ultimately subject to motive, component **Black Box** was introduced framing both components, signifying sense-making and reasoning process. Connectivity between all components was then captured through introducing component **Feedback/feedforward** whereby for example, behavioural resistance may feedback altering value resistance and goal importance may feedforward contributing to motive.

Finally, to ground all such forces formally ontologically, as arising and taking effect in the mind of a physical human being, two model versions were generated. In the first model, each component was attributed solely to a specific individual, B, thereby reflecting B as a *fully* self-motivated (self-induced) individual engaging in behaviour towards B's goal attainment. The second model, attributed each component to reflect an A-B power-over where sources, potential and Actual-influence and acts by serving to induce B's behaviour, were attributed to A. Importantly, attributing components in this manner reflected the *origin* of all psychological forces alone, retaining the reality that these forces arise and take effect within individual B's mind (mental process). It is appropriate by this schema to consider B as *under* the power of B (power-to) and *under* the power of A (power-under / power over) thus in the power-over model, exercised power was thereby captured as *enacted* power and accordingly attributed to both A and B.

Step 4 focused on establishing the difference between influence and power. First, it was necessary to obtain a single integrated power-to / power-over model capturing a reciprocal relationship between two individuals A and B. Full integration

however meant attributing all components to both A and B and was found to lose explanatory power. The optimum solution discernible, captured an independent A power-to process (excepting effects), in combination with an A power-over B process, in other words, A's freedom to act and enact power over B. Thereafter, to distinguish influence and power, given power stood as the end-to-end process, core power states were formally recognised as *influence states* in accordance with Origin definitions (Chapter 2, Section 2.5.3.1), more clearly establishing *power* as the *influence process* governing behaviour. Finally, drawing on natural science definitions of efficiency and effectiveness for physical systems, power **efficiency** and **effectiveness** was formalised using corresponding psychological forces and behaviour states (desired, obtained).

Step 5 sought to capture outcomes as integral to the meaning of power, not limited to behaviour, and establish perspective as highly significant in accounts of power. To embrace **outcomes** that extend beyond the discrete behaviour of an individual, the effects component was conceived as capturing direct and consequential effects. Discrete direct effects through feedback both continuously shapes the process as an ongoing flow of power at the individual level that may combine with the behaviour of others generating collective behaviour towards outcomes of interest. In principle, to obtain IOR-power requires extending the model horizontally, to capture *all* embedded individual discrete behaviours, and vertically, to capture all upwardly inclusive collective behaviour (groups, organisations, IOR), and longitudinally, to capture all cumulative behaviour over time generating outcomes of interest. IOR-power is thereby theorised to be an ongoing indeterminate *flux* of IOR-influence. Origin perspectives were clear within the model thus to conclude step 5, marginalised perspectives and insights from the exploratory study were controlled to have been accounted for.

C.1.6 Stage 6 – Explanatory theory

The conceptual framework was formalised first by including core key features that elaborated attributes and positioning the framework as a *static* descriptive definition of IOR-power. The process model, including colour coding to distinguish component types and indicate direct links to the conceptual framework, was then established as a *real* definition of IOR-power. Lastly, accompanying tabulated succinct definitions and explanations of all attributes and components were generated.

C.2 Theory development phase 2

Further methodology details are available in S-Appendix TD-2.

C.2.1 Stage 1 – Model forward extension

Through additional feedback/feed-forward connections, components *outcomes, environment*, and *goals* offered increased explanatory power to existing components, for example, component environment*al* (psychological forces) was thereby given grounding in the concrete material and social environment, and component importance, became more explicitly linked to goals.

C.2.2 Stage 2 – Model backward extension

Correspondence with Integration Definition for Function Modelling language, IDEF0 (Mackulak, 1984; Waissi et al., 2015) meant that where originally mechanisms depicted as acting on a component contributed to generating the component, in the fully extended model all such mechanisms contribute to transforming the component into the next core component. In doing so, a clearer distinction between key mechanisms, value resistance and intrinsic resistance was established. Lastly, organised resources to the extent valued (value resistance), was formally recognised as a *resource* state, contributing to generating the next core component, sources as valued resources being held in a *dependence* state, *specific* to the A-B relationship.

C.2.3 Stage 3 – Model adjustments

Extending the model backwards and forwards permitted first and more correctly to consolidating means into a *single* component, directly governing transformation from Actual-influence to Enacted-influence. This qualified further the important distinction between these two core states (actual, enacted), but where components black box and motive remained necessary to fully explain this complex transformation. It also enabled capturing goals as acting on effects, thereby capturing outcomes as being goal *driven*, or not, and more clearly viewing effectiveness at all levels (individual, group, organisation, IOR) as being the difference between goals and outcomes obtained.

Second, it became feasible to formally ground the process in recognisable entities (social and natural), that is organised resources, environment, and goals. Thus, the process more fully captured specific types of entities and types of mechanisms, giving rise to observable events (effects, outcomes) according with theory anchored in a dialectical critical realism perspective (Chapter 2, Section 3.2, Figure 15).

Third, where in stage 2, effectively two states became apparent, resources and dependence, this was logically extended across the process, formally generating states in time (t0 to t7) reinforced through the addition of a weighted arrow to bear the sense of the emergence of states, yet possibility of regression. Mental events (state formation, regression) also became more readily recognisable as embedded in the process. Continuing with notion of states and emergence, the black box representing the *mental* engine of power, was formalised as having three layers, perception (basic sense-making), mental stances (Actual-influence, identity formation) and agentic (acting, absenting). The first two layers may be viewed as a fluid mental framework, through which *covert* behaviour arises, and the third layer (agentic) that attracts greatest attention in power discourse and analysis, where overt behaviour emerges taking effect in both social and natural worlds (environment).

Component, motive, was the only psychological force to retain its original position in the process, and its overall governing role was more precisely defined in Aristotelian causal terms as the *efficient* cause *of* IOR-power in stage 4 (Benbya and McKelvey, 2006; Falcon, 2019; McKelvey, 2004).

C.2.4 Stage 4 – Power versus Influence

Enhancing explanatory power permitted in addition drawing on complexity science, that recognises two further causes, top-down and bottom-up, reflecting multi-levelled phenomena (Benbya and McKelvey, 2006; McKelvey, 2004). It became salient and possible to capture agents A and B (organised resources), as semi-autonomous agents representing bottom-up forces in-play, and governing structures of the environment (environment) as top-down forces in-play, combining at core component Potential-influence. Empowerment and disempowerment thus became held to take effect at this stage in the process whereby constrained versus

enabled outcomes became visualised as how bottom-up Potential-influence may be respectively diminished or augmented by top-down environmental influence. Theoretically, this partially reflects the real domain of the possible (Chapter 2, Section 3.2, Figure 15) that may or may not become actualised (domain of the actual) in a concrete A-B relationship.

C.2.5 Stage 5 – Framework / Model alignments

Alignment commenced logically with classification attributes foremost to correlate and give prominence to all types of real entities and mechanisms, core states and events, constituting the process model, as either attributes or attribute features. In doing so, reality and perspective became formalised as attributes to portray existential commitment and that accounting of a *specific* power is necessarily an adopted perspective. Definition attributes were then aligned and oriented towards the process in a manner that framed, complemented and necessarily was consistent with classification attributes. Attribute expression whilst retaining process as the core feature was extended to emphasise that the process is enacted and relates to outcomes, and the core feature of attribute assumptions became that all assumptions be justifiable rather than necessarily explicit.

Thereafter, property attributes were adjusted primarily to align and further frame classification attributes and obtain consistency in the theoretical significance of properties in describing the nature of power, such as connectivity recognising feed-back/feed-forward as an extension to the core feature of a primary connection between A and B (power-over/freedom-to). Attribute transparency had been noted to implicate power as being held moreover transparent than obscured, whereas other properties more accurately portrayed the reality of the property. Emphasis was thus given to the other end of the continuum capturing the property as obscurity that also better aligned with featuring black box as an important extension to the core feature, accessibility. Lastly, characteristic operationalisation was adjusted to be meaningfully consistent with all other characteristics. In doing so, operational definition aimed at dispelling with notions that an operational definition being a *general* or *specific* definition rather always a perspective.

C.2.6 Stage 6 – Revised explanatory theory

Comparable with the original framework and retaining the structure of four characteristics, the updated framework incorporating adjustments made to the detailed structure of attributes and features constructed in stage 5, became the revised conceptual framework. In addition, clearly signalled were those attributes that corresponded directly with model real components (entities, mechanisms, states, events). Consistent also with the original framework were tabulated succinct but more detailed definitions for each attribute incorporating qualifications. To avoid repetition, model real component definitions were provided through direct reference to the process model.

To support the framework, three specific and complementary models were further referenced within the tabulated definition, formalising these models as integral to the theory. First in support of attribute *reality*, the model explaining ontological depth and reality domains (Chapter 2, Section 3.2, Figure 15) was incorporated. Second, in support of attribute *perspective*, an adapted model (Edwards, O'Mahoney and Vincent, 2014 p.27) was included qualifying what constitutes an intensive or extensive process perspective. Lastly, the extended three-dimensional measurement framework (based on Provan, Beyer and Kruytbosch, 1980) developed in theory development phase 1 (stage 2) became incorporated, exposing needed clarity in type of measurement method (objective-subjective continuum), as distinct from adopted perspective sought (perception-reality continuum), thereafter power perspective (potential-actual-enacted).

Comparable with the original process model, the revised process developed through stages 1 to 4, became the revised explanatory theory. Consistent with the original process model but in a more comprehensive manner, 32 accompanying definitions complete with key qualifications were tabulated, foremost related to the process at the individual psychological level. Process components were categorised and captured as being one of three types of components, either types of entities and mechanisms such as goals, or states and events thereby rendered possible such as effects, or descriptive components serving to characterize power more fully such as continuums, efficiency, and effectiveness. All 32 components

were then further tabulated to explain how each component translates to the IOR level and beyond.

Three models are positioned to elaborate translation and characterization of IOR-power. The first, depicts how the detailed individual level model may be extrapolated and simplified into a basic model fully connecting social and natural power. The second, is the theoretical evaluation system developed in theory development phase 1 (stage 2) establishing value as the translatable unit of force. Lastly, a model capturing as a dimension of the domain of *possible* (Chapter 2, Section 3.2, Figure 15), an empowerment-disempowerment continuum, visualised through the three core power states, potential, actual, and enacted, reflecting gains or losses in potential power subject to collective support and access to necessary resources.

Furthermore, for application in a concrete case, attribute perspective imposes a requirement to anchor and orient the process in a focal A-B relationship. This requires appropriately identifying A and B, and attributing components to either A and/or B. A series of tailored models were thus developed for reference purposes, capturing how this may be achieved. Models were built from a logical starting scenario of either A or B acting independent of all other social agents, physically constrained, enabled, or influenced only by the self or natural agents, through to a fully integrated inter-dependent A-B power relationship including joint-working. These models complement the formal theory that lies in between these two extreme models, as the optimum depiction of IOR-power for *explanatory* purposes.

C.3 Field studies method compliance

C.3.1 Case selection

Miles and Huberman (1994) Criteria	General Relevancy Individual case participants primary conditions	Exploratory Study	Confirmatory Study	Test Case Study
Relevance to conceptual framework and research question	Representative practitioners with experience of the IOR context. *Relevant individual.*	Specifically including experience in aerospace industry supply chain partnerships.	Ideally experience across IOR types including product supply co-operative intensive.	Embedded in test case IOR and individual-individual level relationship.
Can and will the phenomenon appear - potential to generate rich information	Phenomenon is omnipresent and ubiquitous, yet obscured and complex and relies on practitioners, capable and willing to engage fully in the research facilitated by strength of relationship existing or built with the researcher (longevity, trust, respect) fostering openness and frankness. *Accessing meanings and prior experience.*	Ideally mature, experienced, and open practitioners, well known to researcher.		Targeted profile: experienced and open practitioners but remained subject to project leader selection.
Analytical (*theoretical*) generalisability	Ideally obtaining a mix of gender, breadth of experience individually and collectively across a range of practice functions, roles, and industries. *Small N advancing plausibility.*	Indicative alignment between *initial* theoretical framework and fresh perspectives.	Critical alignment / misalignment with provisional theory.	Targeted profile: Recognisable role categories replicable across IORs.
Potential to generate believable explanations	Practitioner concrete experience, perspectives, and insights with freedom to share and express views guided by sufficient understanding of the purpose of the study and sensitivity by the researcher of potential difficulties or barriers to expressing views. *Credible and knowledgeable professionals.*			Aligned to formal joint goal soliciting meaningful descriptions. Emphasis on explaining behaviour duly framed by power and influence.
Ethics	Practitioner independence, anonymity, freedom, and willingness, capturing the voices of practitioners (as people, not objects). Full confidentiality accorded. *Adherence to Cranfield ethical guidelines (Cures)*			
Feasibility	Availability and willingness of practitioners to participate in planned timescale, foremost through levering researcher professional contacts and where necessary Cranfield University reputation and connections.			Reliance on project sponsors / leaders to initially engage embedded participants.

Table C-1. Case selection criteria applied to individuals across field studies

Miles and Huberman (1994) Selection Criteria	Relevancy IOR-Case primary conditions
Relevance to conceptual framework and research question	An identifiable typical inter-organisation relationship, serving as a concrete IOR context with embedded practitioners as individual cases.

Can and will the phenomenon appear - potential to generate rich information	• A significant formal partnership relationship between organisations of relative substantial size (>1000 employees) with established identities and structures, provides:
	  (a) clarity of relationship and relationship boundaries
	  (b) process breadth, depth, and complexity
	
	• Ideally (not necessary) a customer-supplier supply chain relationship with identifiable joint working processes and practices that readily capture a relational boundary

Analytical *theoretical)* generalisability	• The context is *materially* representative of an inter-organisation relationship (IOR) serving as a typical case
	
	• Tracing of multiple, individual-individual level processes within the IOR-Case:
	  (a) provides a level of theoretical generalisation at the concrete individual level based on replication logic
	  (b) thereafter, permits inferences to be drawn at the level of theory constituting the unit of analysis in this research i.e. Power as a process at IOR-Case level
	
	• By not seeking to explain a specific outcome rather using a specific joint organisation goal to guide evidencing more generally specific process qualities enhances generalisability at IOR-Case level

Potential to generate believable explanations	Case where the context is readily understandable to:
	  (a) not distract attention away from process explanations provided
	  (b) facilitate relating explanations to contexts experienced by the reader

Ethics	• Freedom, and willingness of organisations to participate • Confidentiality accorded as requested or required, to not adversely impact organisation relationships or reputations • Estimated risk level 2a (Cures levels)
Feasibility	Capability and joint willingness of organisations to participate in planned timescale, foremost through levering researcher professional contacts and where necessary Cranfield University reputation and connections.

Table C-2. Case selection criteria applied to test case study IOR-Case

C.3.2 Interview method compliance

	Kvale and Brinkmann (2009) Method Compliance

Thematizing	! **Purpose** of investigation and conception of the **theme** formulated <u>before</u> interviews start
	! **Central theme** was **power**, and supply chain partnership relationships constituted the context of interest.
	! **Theoretical frame** established based on a prior scoping study as:
	  • Initial conceptualisation of power *(framework)* and perspectives of power *(model)* across supply chain partnerships
	  • Definition of partnerships
	! To **support** consideration of how performance implications of power distribution across supply chain partnership relationships might be empirically studied, the exploratory study aims were:
	  • **Primary Aim**: Exploratory / Empirical Knowledge *(experience, meaning)*
	  Gain understanding of how power manifests itself to practitioners in supply chain partnership relationships with emphasis placed on experience *(underpinned by meaning)*
	  • **Secondary Aim**: Exploratory / Empirical Knowledge *(meaning, experience)*
	  Examine the validity of the theoretical frame *(framework and model)* in the context of interest *(supply chain partnerships)* with emphasis placed on meaning *(underpinned by experience)*.

Designing	! **Small N Multiple Case Study** embracing individuals as idiosyncratic cases (Yin, 2009)
	
	! **Case selection** (participant; interviewee) criteria established (<u>Table</u> C-1)
	! **Interview schedule** based on participant availability; planned completion date *(end June 2010)*
	! **Form** of interview designed to move between conceptual, narrative, and discursive forms
	! **Interview approach** established as phenomenological
	! **Interview Protocol** developed to structure and guide interview
	! **Thematic data coding** system established prior to data collection
	  • Data capture and analysis aligned with the initial conceptualisation of power and partnership definition, and thereafter the four sub-research questions (ES-RQ1 to ES-RQ4)
	  • Specific code to capture characteristics beyond scope of the initial conception of Power and definition of Partnerships

Interviewing	! **Interview Protocol** developed to structure and guide interview ! **Style** of interviewing and environment adapted to relationship between interviewee and interviewer as probing yet non-confrontational *(natural, open, relaxed)* ! **Alertness** to setting the scene, communication styles and stances, being reflective, following lines of enquiry, verifying statements, motivating interviewee, and non-verbal behaviour ! **Sought** to interpret in situ, to guide, lines of inquiry towards fulfilling aims of the interview
Transcribing	! **Verbatim** in accordance with writing code to faithfully capture as far as possible the spirit and meaning of oral communications whilst protecting confidentiality ! **By interviewer** capturing non-recorded nuances sensed during interview *(e.g. body language)*, and maintain a closeness to interview, as an integral part of analysis ! **Stored** securely on private computer and password protected

Analysing	! **Meaning layers** recognised and distinguished accordingly *(interviewee, critical common sense, theoretical)* seeking to establish level of alignment between interviewee (perceived), critical common sense (actual) and theoretical (theoretical frame) meaning
	! **Double hermeneutic** cycle fully acknowledged rendering all findings to be critical interpretations by the interviewer *of* interviewees making sense of a) power in partnerships *(meaning; experience)* and b) the interview experience
	! **Theoretical frame** *(power framework, model; partnership definition)* employed to identify and structure data *(meanings; experience)* aligned to the theoretical frame
	! **Emergent data** outside the scope of the theoretical frame accorded equivalent value in generating tentative propositions that:
	  • **challenge** the sufficiency of the theoretical frame in capturing what power is
	  • **inform** interpretation and relevance accorded to experiential accounts of power in power studies
	! **Repeated reading** of transcripts as a whole and in parts throughout analysis with reference back to digital recording as necessary for clarity and retain sense of interviewee meanings expressed throughout the analysis

Verifying	! **Knowledge Objectivity**
	  • In the **first instance** is *adequate to object*, in giving a voice to the practitioner to express own meanings and experiences, and allowing the *object to object* through practitioner assessment of:
	    (a) validity of the initial conception of power
	    (b) transcript verification
	  • S**afeguards** against avoidable and undesirable bias / prejudicial interpretation *(conscious / unconscious)* by the researcher were self-imposed through adhering to a systematic data analysis process and avoiding drawing conclusions until all data was coded
	  • **Reflexive objectivity** was strived for through seeking objectivity in the inherent subjectivity of both interviewee accounts and interpretation by the interviewer, whilst embracing any material significance of subjectivity, to the subject matter *(Power, Partnerships)*
	  • **Recognised bias** of the researcher lay mainly in having a clear understanding of power conception in the natural sciences and a belief that the same level of clarity in meaning of power in the social sciences, is feasible.
	  • **Findings as knowledge** not claimed to be free from subjectivity nor necessarily generalisable across all practitioners, rather as valid knowledge of use in answering the research questions
	! **Validity** is supported primarily through the findings being defensible, that is credible and trustworthy based on the *design* of the study, and the level of *transparency* in a) methods, b) raw data used as evidence, and c) inferences drawn
	! **Reliability** is similarly supported by the design and transparency of the study beyond which, nothing identifiable was to be gained by conscious distortion for either interviewees or interviewer

Reporting	! **Reported** within a broader thesis as an identifiable, independent study constituting **Phase FR 1** of a larger research project
	! **Conclusions** drawn directly contribute to:
	  • **Phase SLR 1** of the research project - a systematic literature review (SLR1), in validating the pertinence of the literature review questions developed *(scoping study),* and as perspectives informing critical analysis of the literature thereafter
	  • **Phase TD 1** of the research project, theory development, as comparative practitioner perspectives in devising a means to integrate academic theoretical perspectives

Table C-3. Exploratory study interview method compliance

	Kvale and Brinkmann (2009) Method Compliance
Thematizing	! **Purpose** of investigation and conception of the **theme** formulated <u>before</u> interviews start ! **Central theme** was **power**, and inter-organisation relationships constituted the context of interest. ! **Theoretical frame** established based on a prior exploratory study (Phase FR 1), systematic literature review (Phase SLR 1), and theory development (Phase TD 1), constituting a proposed theory of power *(existential commitment)*: A Conceptual Framework (CF) and A Process Model (PM) ! To **test** the capacity of the theory to render **intelligible** and explain in a non-ad-hoc way the phenomenon power in inter-organisation relationships to practitioners, who attribute meaning to power and experience the phenomenon in their work life. • **Primary Aim**: Confirmatory / Empirical Knowledge *(experience, meaning)* Identify agreements *(convergences)* and disagreements *(divergences)* in how the theory explains power • **Secondary Aim**: Confirmatory / Empirical Knowledge *(meaning, experience)* Gain an understanding of why convergences and divergences occur to support evaluation of their significance and whether divergences justify theory re-descriptions.
Designing	! **Small N Multiple Case Study** embracing individuals as idiosyncratic cases (Yin, 2009) ! **Case selection** *(participant; interviewee)* primary criteria established (**Table C-1**) ! **Case selection** *(participant; interviewee)* secondary criteria established (**Appendix C.7.2**) ! **Mixed-method** compliance established to the extent possible given the purpose of the study (**Table C-7**) ! **Interview schedule** based on participant availability; planned completion date *(End June 2014)* ! **Form** of interview designed as conceptual ! **Interview approach** established as an *explanatory critique* underpinned by the tenets of Interpretative Phenomenological Analysis (IPA) ! **Interview Protocol** developed to structure and guide interview ! **Thematic data coding** system established prior to data collection is: • Given by the proposed theory of power as all Conceptual Framework (CF) attributes and Process Model (PM) components as IOR-power qualities • Characteristics beyond the scope of the proposed theory of power *(as presented)*, are captured as emergent themes
Interviewing	! **Interview Protocol** used to structure and guide interview ! **Style** of interviewing and environment adapted to relationship between interviewee and interviewer as probing yet non-confrontational *(natural, open, relaxed)* ! **Alertness** to setting the scene, communication styles and stances, being reflective, following lines of enquiry, verifying statements, motivating interviewee, and non-verbal behaviour ! **Sought** to interpret in situ, to guide lines of inquiry towards fulfilling aims of the interview
Transcribing	! **Verbatim** in accordance with same writing code used for exploratory study to faithfully capture as far as possible the spirit and meaning of oral communications whilst protecting confidentiality ! **By interviewer** capturing non-recorded nuances sensed during interview *(e.g. body language)*, and maintain a closeness to interview, as an integral part of analysis ! **Transcriptions** generated within in a pre-formatted data base (CADB 2), aligned to corresponding written responses *(quantitative and qualitative data)* and all other interview data ! **Stored** securely on private computer and password protected
Analysing	! **Meaning layers** recognised and distinguished accordingly *(interviewee, critical common sense, theoretical)* seeking to establish level of alignment between interviewee (perceived), critical common sense (actual) and theoretical (theoretical frame) meaning ! **Double hermeneutic** cycle fully acknowledged rendering all findings to be critical interpretations by the interviewer *of* interviewees making sense of a) power in inter-organisation relationships *(meaning; experience)* and b) the interview experience ! **Theoretical frame** *(power theory)* employed to identify and structure concept data *(meaning; experience)* aligned to the theoretical frame ! **Emergent data** outside the scope of the theoretical frame accorded equivalent value to generate specific findings as tentative re-descriptions that: • **challenge** the sufficiency of the theoretical frame in capturing what power is • **inform** interpretation of, and relevance accorded to, experiential accounts of power, in power studies • **Repeated reading** of transcripts as a whole and in parts throughout analysis with reference back to digital recording as necessary for clarity, retaining sense of interviewee meanings expressed, at all times

Verifying	! **Knowledge Objectivity**
	• In the **first instance** is adequate to object, in giving a voice to the practitioner to express own meanings and experiences, and allows the object to object, in the practitioner's assessment of the validity of the proposed power theory
	• **Safeguards** against avoidable and undesirable bias / prejudicial interpretation (conscious / unconscious) by the researcher were self-imposed through adhering to a systematic data analysis process and avoiding drawing conclusions until all data was coded
	• **Reflexive objectivity** was strived for through seeking objectivity in the inherent subjectivity of interviewee interpretations of the theory and critical accounts, and in the interpretation by the interviewer, whilst embracing any material significance of subjectivity, to the subject matter (Power; IORs)
	• **Recognised bias** of the researcher remained as having a clear understanding of power conception in the natural sciences and a belief that the same level of clarity in meaning of power in the social sciences, is feasible.
	• **Findings as knowledge** not claimed to be free from subjectivity, nor necessarily generalisable across all practitioners, rather as valid knowledge of use (expert practitioners) in answering the research questions
	! **Validity** is supported primarily through the findings being defensible, that is credible and trustworthy based on the *design* of the study, and the level of *transparency* in:
	      (a) methods,
	      (b) raw data used as evidence, and
	      (c) inferences drawn
	! **Reliability** is similarly supported by the design and transparency of the study beyond which, nothing identifiable was to be gained by conscious distortion for either interviewees or interviewer

Reporting	! **Reported** as an identifiable, independent study constituting **Phase FR 2** of larger research project, integrated within broader thesis ! **Conclusions** drawn directly contribute to **Phase TD 2** of the research project, a second theoretical development phase, in establishing justifiable theory re-descriptions

Table C-4. Confirmatory study interview method compliance

	Kvale and Brinkmann (2009) INTERVIEW Method Compliance
Thematizing	! **Reference Case Study Method Compliance – Project Overview (<u>Appendix C.3.3, Table C–6</u>)**

Designing	• **Reference Case Study Method Compliance – Project Overview** <u>Appendix C.3.3, Table C–6)</u>
	• **Case Study Protocol** developed demonstrating compliance with case study methods
	• **Embedded Case Selection** *(participant; interviewee)* primary criteria established (**Table C–1**Table C-1)
	• **Interview Schedule** agreed with project sponsors and participants based on site location and availability
	• **Form of Interviews** designed as factual (organisation; partnership) or narrative (main)
	• **Interview Protocol** developed to structure and guide the three types of interviews
	• **Interview approach**
	• All participants were informed of the background and purpose of the interviews and provided with questions in advance
	• Organisation and Partnership *context* interviews established as oriented towards fact gathering where participants served as informants on participating organisations
	• Main or Process interviews established as personal and experiential, oriented towards backward process tracing of a significant behaviour event framed within a general reflection of what influences behaviour:
	  (a) *Flexibly* guide and probe backward causal tracing of behaviour related to an established A*B* joint goal of relevance
	  (b) *Stimulate* appropriate reflexive thinking towards the qualities under study fostering openness whilst ensuring narratives remain as grounded in experience as possible
	  (c) *Assist / confirm* interpretation of questions, expressed experiences, and viewpoints
	  (d) *Gain insights* evidencing the **utility** of adopting a **power lens** to understand behaviour and thereby performance
	• **Thematic data coding** system established prior to data collection
	  (a) general data supporting or otherwise in broad terms the specific power quality propositions, and
	  (b) specific data supporting or otherwise the specific power quality propositions during backward tracing a significant event
	  (c) other data relevant to elaborating the relevance of specific power qualities

Interviewing	! **Interview Protocols** used to structure and guide interview ! **Style** of interviewing was adaptive based on the interviewee and interviewer being effectively unknown to one another prior to the interview *(excepting sponsors)* whereby in situ judicious and non-confrontational *(natural, open, relaxed)* probing was employed ! **Alertness** to setting the scene, communication styles and stances, being reflective, following lines of enquiry, verifying statements, motivating interviewee, and non-verbal behaviour ! **Sought** to interpret in situ, to guide lines of inquiry towards fulfilling aims of the interview
Transcribing	! **Intelligent Verbatim** to faithfully capture the spirit and meaning of oral communications ! **Professional Transcription Service** employed given volume of transcriptions and timescales thereafter fully checked by the researcher against interview recordings for accuracy ! **Transcriptions** made available as password protected stand-alone documents to all participants to check for accuracy in representing their experiences and stances, and formalising any part of the interview to be treated as confidential to the *individual* ! **Stored** securely on private computer and password protected

Analysing	! **Meaning layers** recognised and distinguished accordingly *(interviewee, critical common sense, theoretical)* seeking to establish *clear* alignment between interviewee meanings and theoretical meanings *(theoretical frame i.e. posited power theory)* ! **Double hermeneutic** cycle fully acknowledged rendering all findings to be critical interpretations by the interviewer *of* interviewees making sense of what drives and influences their behaviour and outcomes ! **Theoretical frame** *(power theory)* employed to identify and structure empirical data alignment either specifically to the theoretical propositions under test or more generally to the theoretical frame ! **Repeated reading** of transcripts as a whole prior to and post analysis, and in parts throughout analysis referencing back to digital recordings as necessary for clarity and to retain full sense of interviewee narratives, at all times ! **Embedded Case Order** of analysis was first by organisation, followed by actual sequence of interviews to facilitate identifying any distinguishing collective features *(organisation based)* relevant to theory testing or theory utility, and to recognise where probing may have intuitively shifted to areas sensed as being insufficiently covered in previous interviews ! **Thematic Data Coding** followed the pre-set analytical order established in the pilot case with data captured in the pre-formatted worksheet (cases evidencing propositions) and tables (narrative *extracts*)

Verifying	! **Knowledge Objectivity**
	  • In the **first instance** is *adequate to object*, that is *practitioner perceptions*, in giving a voice to the practitioner to express own experiences and meanings
	  • **Safeguards** against avoidable and undesirable bias / prejudicial interpretation *(conscious / unconscious)* by the researcher were self-imposed through adhering to a systematic data analysis process and avoiding drawing conclusions until all data was coded
	  • **Reflexive objectivity** was strived for through (a) evoking a deliberate controlled reflection by participants framed within a general reflection of what influences their behaviour, (b) the researcher seeking objectivity in practitioner narratives, and constant self-challenging of *first* interpretations, recognising a strong personal theoretical stance had emerged by this stage of the research
	  • **No Conscious Bias** by the researcher other than focus on seeking to unearth as far as possible relevant evidence to test the specific power qualities, possibly at the expense of unearthing fresh perspectives, however, given the purpose of this field study and limited time within which to obtain relevant data, this was considered appropriate
	  • **Findings as knowledge** not claimed to be free from subjectivity rather fully acknowledges reliance on perceptions and memories of practitioners in systematically testing theoretical propositions derived from the theory and more fundamentally appealing to the plausibility of psychological mechanisms within theory
	
	! **Validity** is supported primarily through the findings being defensible, that is credible and trustworthy based on the *design* of the study and level of *transparency* in (a) methods, (b) raw data used as evidence, and (c) inferences drawn
	
	! **Reliability** is similarly supported by the design and transparency of the study beyond which, nothing identifiable was noted to consciously distort interviewees narratives or interviewer interpretation, moreover *real* issues and interests were readily apparent across all interviews, and all participants demonstrably engaged fully in the interview

Reporting	! **See CASE STUDY Method Compliance – Report Structure <u>Appendix C.3.3, Table C–6</u>))**

Table C-5. Test case study interview method compliance

C.3.3 IOR-Case study method compliance

<table>
<tr><td></td><td>Yin (2009)
CASE STUDY Method Compliance</td></tr>
<tr><td>General</td><td>

!**Case Study Design**

- A case study design was employed in both preceding field research components (FR 1 and FR 2) involving multiple independent expert practitioners as individual cases *(small N)* that were not context-bound i.e. IOR-Case specific or sensitive rather bound by IOR experience
- In this field research component (FR 3) individual cases are embedded cases within a selected IOR-Case i.e. organisation / IOR member cases

</td></tr>
<tr><td>Project Overview</td><td>

!**Background:** An interest in improving management of supply chain partnerships to improve supply chain performance, led to research initially seeking to understand whether *power shifts* towards major suppliers adversely impact supply chain performance outcomes:

- **Phase 1** of the research, involving a scoping study (SS), exploratory study (FR-1), and systematic literature review (SLR 1) moreover identified the need to develop a clear understanding of what power *is*, in inter-organisation relationships (IORs)

- **Phase 2** of the research
  (a) Developed a *unifying explanatory theory of power* through a meta-critique and synthesis of the data obtained in Phase 1 (TD-1)
  (b) Subjected the theory to direct critical assessment *(explanatory critique)* by a small number of expert practitioners (FR-2)
  (c) Further developed the theory (TD-2) to enhance intelligibility and *formally* incorporate natural power

The Proposed Theory

- *Contrasts* with broad definitions and statements about the phenomenon power in the context of inter-organisation relationships (IORs), in being a comprehensive, *unifying* theory of what *constitutes* and *characterises* power in this context (IOR-power)
- *Comprises* a conceptual framework aligned to a process model with existential commitment *(real definition)*, describing and explaining IOR-power as a complex social and natural *process*, governing outcomes
- *Credibility / Validity* of essential qualities posited to constitute and characterize IOR-power varies

  From*: reasonably strong* based on plausible empirical evidence obtained to date *(e.g. types of Sources)* or being relatively uncontentious and explicitly supported in the IOR field of study *(e.g. feedback)*

  To*: relatively weak*, being *specific* in significance within the proposed theory *(marginalised or under-explained in extant theories)* and lacking supporting empirical evidence within IOR-power studies

- *Specific qualities* marginalised or under-explained by existing power theories crucially:

  (a) *Capture* influence as behaviour governance, and more specifically as a psychological process grounded in the mental processing of Individuals, that is pivotal but not sufficient to explain outcomes, in this context
  (b) *Crystalizes* a salient relation yet distinction between Influence and Power whereby Influence is the central mechanism *of* IOR-Power
  (c) *Further crystalizes* an important *relation* between goals, behaviour, and outcomes, as governed *by* Motive thereby positioning Motive as central in explaining performance *(a task or operation seen in terms of how successfully it is performed)*

</td></tr>
</table>

! **Purpose as Theory Testing**

Tenets (Archer et al, 1998; Bhaskar, 2008 [1975]; Danermark et al, 2002; Edwards et al, 2014; Elder-Vass, 2004, 2011; Olsen, 2009)

- An *explanatory critique* (Bhaskar, 2008 [1975]) as the overriding research methodological approach involves critical and analytical movement backwards and forwards between the empirical domain *(experience)* and the transfactual domain *(theory)* **[Figure C-2 (a)]**
- The proposed theory of IOR-power *cannot be proven* only made *credible* through sound transfactual arguments, capacity to render the phenomenon intelligible, and quality empirical evidence *(experience)*
- Specific research methods are not prescribed however *qualitativ*e methods are *essential*, and abduction and retroduction methods, indispensable
- That a research design favours intensive *(small N),* or extensive *(Large N)* examination is judged by the type of knowledge sought and maturity of the theory
- Ontological depth given by recognising downwardly inclusive entities, events and causal relations, as *emergent levels* of reality, in addition to domains of reality *(empirical, actual, possible, transfactual)* enables, *multi-level explanations* of IOR-power *(group, organisation, inter-organisation)* to be translated or inferred from *empirical evidence* at the *individual* level:
  - (a) For *ideal* organisations *functional* equivalence of process components is posited to *hold* between levels even though structurally each level is unquestionably different (Whetten et al, 2009; Morgeson and Hofmann, 1999)
  - (b) For *non-ideal* organisations, specific features of IOR-power must be further recognised such as vertical *escalation* processes, *contradictory* behaviour, and communications, and the *informal* not merely formal or structured evaluation processes *(black box)*, in any account of power translated or inferred across levels
  - (c) In both cases *(ideal; non-ideal)* given not least the omnipresence, complexity, and obscurity of IOR-power that *is* theorised as a process; it is temporal *perspectives* of IOR-power anchored in an outcome of relevance alone, that can be empirically obtained

Key Considerations

- The theory is formally positioned as borderline nascent – intermediate, rendering Large N research *(Intensive; Extensive)* premature (Edmondson and McManus, 2007)
- Specific qualities either explicitly extend across the full process *(e.g. Goals)* or implicate the full process *(e.g. Motive)* thus a process Intensive perspective provides insufficient scope to evidence the full range of qualities
- Focusing empirical testing on theory *specific* qualities most advances theory credibility however being embedded in human mental processes renders *direct* observation infeasible

! **Adopted Theoretical Perspective**

Unit of Analysis (Theory)

- The theoretical unit of analysis is the IOR- *power process* arising in focal IOR between two organisations A* and B*
- In accordance with the IOR-power theory under test, the A*B* *relationship (formal and informal)* moreover is the specific *dyadic context* of interest*,* and a dynamic ongoing product of A*B* IOR-power *(process)*

Assumptions

- Organisations A* and B* are *assumed* to be *non-ideal*, exhibiting varying degrees of homogeneity, heterogeneity, and independence in the range of qualities, including behaviour and performance, that characterize individuals and groups (Klein et al, 1994) within and across the two focal entities A* and B*
- Correspondingly, for example, certain individual behaviour may be relatively stable and the norm *(homogeneity)* and other behaviour predictably variable over time *(heterogeneity)*, and the performance of some groups within and across organisations may be relatively stable, variable, or independent, whilst financial performance of each organisation within an Industry sector similar *(homogeneity)*
- Whilst *initially* framed or structured by a formal A*B* relationship *(exchange contract projecting ongoing exchanges)*, *thereafter* it is *assumed* that a network of embedded relations / relationships, joint structures, activities, and processes within and across the two focal entities A* and B* *(multi-level and inter-level)* formally and informally evolves over time, constituting the A*B* relationship at a given Time

143

! **Adopted Empirical Perspective**

Level of Analysis (Empirical)

- An Individual-Extensive perspective **[Figure C-2 (b)]** of IOR-power arising between an individual (A) and another individual (B) *embedded* within the focal A*B* IOR and IOR-power process constitutes the empirical units of analysis and level of analysis
- Foremost, A and B each express and describe behaviour experiences within an A-B reciprocal relation, and *if* A and B are *matched* pairs in an interpersonal relationship, a *dyadic* Individual-Individual relationship IOR-*power perspective* is obtainable (Thompson and Walker, 1982)
- For A and for B, all other relations / relationships (C, D, E etc.) constitute the multi-levelled Environment that includes the respective internal organisation environments (A* or B*), the IOR environment (A*B*) and the external environment as unique *(specific to A or B)*, common *(both A and B)*, or mutual *(shared)*
- A and B, are recognised as semi-autonomous, adaptive, intentional human agents influenced by (a) themselves *(internal)*; (b) each other *(reciprocal)*; and (c) respective Environments *(external)*, describing and expressing personal stances and experiences whereby the data obtained to evidence the specific qualities is *subjective* in nature lying somewhere on a *perception-reality* continuum **[Figure C-2 (c)]**

Theory Level Misalignment

- The empirical unit and level of analysis is justified as not being the same as the level of theory i.e. misaligned (Hitt et al, 2007):
  (a) An Organisation-Extensive perspective is *not* empirically obtainable given Organisations are *not* assumed to be ideal and IOR-power is theorised to emerge from a *flux* of multi-level and inter-level power processes, the complexity, *compound*, and *temporal* nature of which, prohibits full access
  (b) The Individual level *is* the most fundamental *theoretical* building block theorised to replicate and combine vertically, horizontally, and longitudinally to create the IOR-power level *(downwardly inclusive),* and provides the most *grounded* empirical data to test the theory

! **Evidence Rationale**

- As a *downwardly inclusive* phenomenon *(horizontally, vertically, longitudinally)*:
  (a) Evidence of how theory specific qualities contribute to explaining *individual* behaviour and outcomes within a focal A*B* IOR-Case, whether or not full explanations are obtained, meaningfully tests the foundations of the explanatory theory of IOR-power that either translates to the inter-organisational level or enables inferences to be drawn
  (b) *Multiple* embedded individual cases stand as embedded units of analysis (Yin 2009 p.46) serving to replicate a test of theory foundational propositions that lie at the individual psychological level in the context of a focal IOR and that *collectively* constitutes a *partial* test of the theory at the IOR level
- Evidencing relevance, challenges the completeness and sufficiency of prevailing IOR-power theories
- *Multiple* embedded cases having reflected on specific theory qualities and their own behaviour and outcomes, are reasonably positioned to offer a considered response to direct questions about what IOR-power is and what IOR-influence is, extending intelligibility testing conducted in research phase 2 (FR 2).

Primary Aim:

- Evidence in a non-ad-hoc manner, how specific theory qualities contribute to conditioning behaviour and outcomes at the most grounded empirical level, the embedded individual, to inform the primary research question:

How are IOR-power theory specific qualities manifest in IORs?

Secondary Aim:

- Broadly extend the intelligibility testing conducted in the confirmatory study (phase 2; FR 2) by establishing with a larger population of practitioners, the extent to which IOR-power is recognised as the phenomenon governing outcomes, and influence is recognised as the phenomenon governing behaviour, contributing to answering the secondary research question

How broadly intelligible is the theory to practitioners in IORs and why?

! **Case Study Research Protocol**

- An ethically approved case study protocol *(Cranfield Cures Level 2b)* was developed providing an overview of the project, field procedures, case questions, and the case report
- Compliance against recognised case selection criteria was established for the IOR-Case and embedded cases **[Table C-1 ; Table C-2]**

144

❗ **Method**

Process Tracing

- A *strong* process tracing approach (approach III) (Van de Ven and Poole, 2005) was selected as the most *effective* method without commitment to the doctrine that processes, not things or entities, are necessarily the most fundamental feature of *reality,* given:
  - (a) A critical realist ontological stance is adopted in this research that fully recognises the *significance* of both processes *(generative mechanisms and emergence)* and things (entities), of varying degrees of stability over time, in *constituting* reality
  - (b) Power is theorised as a continuous process *(verb)* yet relies on recognising entities with *causal powers* or mechanisms for its meaning
  - (c) An Individual-Extensive *process* perspective is necessary to obtain the requisite evidence
  - (d) The emergent and regressive nature of the process and causal complexity can be embraced
  - (e) Serves to open "black boxes", in this case individual sense-making and reasoning processes in practice
- Specifically employed is an *explanatory* causal reconstruction or *backward* causal process tracing method (Mayntz, 2016) normally adopted to test deductively a theory about *a specific* event/outcome *(e.g. an election outcome)*
- To answer the specific research questions however, cognitive interest lay in tracing *how types* of obscured psychological mechanisms are instantiated, thereafter *combine* to condition behaviour *towards* Outcomes (Falleti, 2016)
- The method was thus *adapted* to obtain *explanatory* data evidencing theory specific qualities (Ulriksen and Dadalauri, 2016) under test through continuously drawing attention towards the *process* aligned/oriented towards a shared joint Goal (desired outcome) but not necessarily bound by the single, pre-defined outcome
- Fully embracing Interpretative Phenomenological Analysis (IPA) methods, a deliberate controlled reflection and account of a *specific* behaviour experience by an individual was evoked; probing questions about the process more generally beforehand and during specific process accounts, were used to unearth any nuances, critical aspects or possible gaps in specific accounts given

Interviews
- Interviews are used extensively in research and within a critical realist perspective serve to investigate theory-based relationships between causal mechanisms (Edwards et al, 2014)
- In this research, it was necessary to stimulate reflexive thinking to access the mental processes under study *(psychological forces)* that cannot be directly observed
- *Semi-structured interviews* were therefore used for data collection in compliance with recognised interview methods **[Appendix C.6.1]**

Other observations and data
- Where appropriate, observations of the environment and behaviour outside the formal interviews were noted, to support interpretation of the primary data obtained in the interviews
- Organisation websites, confirmed to be current by respective organisation project sponsors, provided further background data on both organisations, complementing organisation and partnership context data obtained in both interviews

❗ **Case Study Joint Research Proposal**

- The ethically approved case study protocol *(Cranfield Cures Level 2b)* was translated into a joint research project proposal, employed to provide full transparency in the purpose and content of the case study, and secure and manage participation with the two participating organisations (A*B*)
- Integral to the case study proposal was an overview of the PhD research, the specific theory qualities under test and the *target* profile of participants corresponding with the established embedded case selection criteria aimed at providing a level of variability in embedded cases conditions to:
  - (a) Evaluate generalisability of the theory across embedded cases
  - (b) Explore the significance of the conditions to meanings attributed to IOR-power and IOR-influence
- Main interview advance interview information, and all interview protocols were provided and agreed with sponsors with only one significant addition to the main interview written invitation: confirming ethical standards and confidentiality
- An interview schedule was agreed with project sponsors and participants (embedded individual cases) based on site location and availability, and revised as necessary to accommodate changes in ongoing business activities and schedules
- Organisation project sponsors were given the option to conduct the joint partnership interview together or separately, and elected to conduct the interview first separately, and then engage in a discussion about the partnership to share their views, as wished

! **Pilot Interviews**

- Partnership and embedded case Main Interviews were piloted with a member of one of the participating organisations including full transcription and analysis to:
    (a) Check question intelligibility
    (b) Review how effective the questions were in obtaining a reasonable understanding of the context *(Organisation and Partnership)*, and importantly in surfacing the sense-making and reasoning processes of an embedded individual case

- Feedback from the pilot Main Interview and conducting a full analysis resulted in five method enhancements / developments:
    (1) Invite future participants to note thoughts during preparation, as memory joggers *(pilot case created and shared preparatory notes)*
    (2) Ensure Goal G provides the opportunity to evidence the relevance of the natural and social Environment
    (3) To manage the inter-relatedness and compound nature of the power qualities from an interpretative and explanatory standpoint, a logical analytical sequence was established that moved from simpler, more recognisable theory specific qualities (e.g. Goals) towards the most obscured theory specific quality under test, Actual-Influence, that necessitated evidencing theory *general* qualities to do so, i.e. as supporting, or evidentiary
    (4) Establish a dedicated Excel Central Analysis Data Base (CADB-3) to capture and process all data specifically including:
        (a) Dedicated worksheet designed to isolate and code all case data against theory qualities
        (b) Dedicated worksheet to capture quantitatively which cases and how many supported theory propositions
    (5) Developed Microsoft Word tables to capture key quotes supporting theory propositions

- Feedback from the Partnership Interview and review of the interview process resulted in three method enhancements:
    (1) Addition of a question at the beginning of the interview to formally capture partnership longevity and background that is central to component Decision in the partnership model employed (Lambert, 2008)
    (2) Provide visibility of the partnership model to aid understanding of the rationale and flow of questions
    (3) Addition of a further question to formally ask if either organisation had a particular interest in power, influence, or behaviour, that might be explored during the project

- The questions and structure of the case Main interviews were not changed however the focal partnership of interest became different given at the time the pilot interview was undertaken there were several potential organisation participants

- Pilot Main interview data was retained and included in the case study as a valid embedded case given:
    (a) There was no material change to content of the main interview
    (b) The focal individual-individual relationship selected by the pilot case related to an individual from one of the participating organisations constituting a valid *indirect* embedded case
    (c) Goal G adopted by the pilot case although relating to a different IOR was similar and fully *relevant* to Goal G in the case study
    (d) Various embedded cases, subject to role, elected to or became more focused on other goals *relevant* to Goal G

146

Case Study Questions	!**Number of Case Studies** • Four potential case study opportunities were progressed *(details omitted for confidentiality reasons)* • Given the level of interest in participation and considering future research opportunities, the possibility of an IOR-Case becoming part of a multiple IOR-Case study further extending theory testing and enabling cross-IOR-Case analysis was recognised in the research proposal • Cross-IOR-Case analysis to reveal any patterns between IOR-power qualities and context however was not the main focus of the research and multiple IOR-Cases *within* the current PhD research project would compromise time accorded to detailed analysis of embedded cases • Ultimately, circumstances and priorities led to a *single* IOR-Case being selected !**Case Questions** Corresponding with question levels 1 to 5, proposed by Yin (2009 p.87) questions were developed up to level 3, specific to the case study. *(Level 4 and Level 5 questions relate to the overall research project and are informed by but beyond the scope of the case study)* **Level 1** – Participants • Interview protocol captures level 1 questions to be directly asked of participants **Level 2 –**Embedded Case • The primary question to be asked of the embedded case *is* the primary research question *(Project Overview)* formulated more specifically as support for *propositions* derived from the theory for each specific power quality (Ulriksen and Dadalauri, 2016) through data obtained from each participant as an *embedded case* (Main Interviews) • The secondary question to be asked of each embedded case *is* the secondary research question *(Project Overview)* translated into evidentiary questions and extended to include determining relevancy of embedded case conditions posited to condition theory intelligibility **Level 3** – Multi-Case • Across multiple embedded cases the main generic question asked was the extent to which support for propositions tested and intelligibility levels were replicated across cases • In the event multiple IOR-Case studies are conducted, foremost theory testing at the embedded case level is thereby extended, thereafter multiple IOR-Cases inform questions about the relevance of IOR-Case *contextual factors* such as relationship primary role *(customer v supplier)* and partnership qualities, to how IOR-power manifests itself in different concrete IOR-Cases
Report Structure	! **Reported** as an identifiable, independent study constituting **Phase FR 3** of larger research project, integrated within the broader thesis ! **Conclusions** drawn directly contribute to supporting the core thesis that the theory developed more fully describes, characterises, and explains IOR-power and a fundamental tool in explaining the significance of IOR-power shifts and improving supply chain performance

Table C-6. Test case study – IOR-Case study method compliance

(a)

	Domain of **Transfactual**	Domain of **Possible**	Domain of **Actual**	Domain of **Empirical**
Mechanisms	Types	Instances	Instances	
Entities	Types	Instances	Instances	
Events		X	X	
Experiences		X	X	X

Domain of **Real** *(Bhaskar, 1975)*

Transfactual: Types of naturally enduring mechanisms and entities, existing independently of any particular event or outcome

Possible: All instances of mechanisms, entities, events, and experiences that could come into being but have not *(the unrealised)*

Actual: All instances of mechanisms, entities, events and experience that have come into being or exist *(the realised)*

Empirical: Experiences *(impressions of the realised)*

[*Adapted from Elder-Vass (2004 p.13)*]

(b)

	What are the qualities?		How relevant is context?	What qualities are prominent?
	Intensive			**Extensive**
	Single Case		**Multiple Case**	
	Individual	Organisation	Small N	Large N
Intensive	Specific **QUALITY** / Individual Perspective / Context Given	Specific **QUALITY** / Complete Perspective / Context Given	Specific **QUALITY** / Comparative Perspective / Context Sensitive	Specific **QUALITY** / Types / Patterns
Extensive	**PROCESS** / Individual Perspective *(Multiple Embedded)* / Context Given *(Individual-Extensive)*	**PROCESS** / Complete Perspective / Context Given	**PROCESS** / Comparative Perspective *(Individual Based)* / Context Sensitive	**PROCESS** / Types/ Patterns

(PROCESS — Intensive ↕ Extensive)

[*Adapted from Edwards et al (2014 p.27)*]

(c)

Extended 3-Dimensional Framework

Evidence Specific Qualities

Power Perspective: Perspective of Power to be determined *(**Intensive v Extensive**)*

Adopted Perspective: From an Agent Integral to the process (A or B) *or* Third Party Observer
AND Recognised as a *Perception of* Power *or* Power as it exists *(Reality)*

Type of Measurement: The extent to which the adopted perspective is determined using subjective or objective based approaches (**Methods**)

[*Developed from Provan (1980 p. 208)*]

Figure C-2. IOR-Case targeted reality domains and perspectives

148

C.3.4 Mixed-method – qualitative and quantitative data

	Harris and Brown (2010) Recommendations		Method Compliance / Non-Compliance
1.	Ensure interview prompts and questionnaire items are structured and highly similar.	Yes	Identical and highly structured prompts and items as the backbone of data collection. Tailored prompts employed for data reliability and validity purposes and pursuing specific lines of inquiry introduced by participants.
2.	Separate data collection by only a short period of time.	Yes	Simultaneous data collection.
3.	Present the object of interest in a highly concrete and specific way.	Yes	The theory is formally presented and made fully transparent.
4.	Anchor participant responses to a common context.	Yes	Specific context is inter-organisation relationships (IORs)
5.	Focus on psychological objects that have simple internal structure (i.e., avoid hierarchical, complex structures).	No	The purpose of this research is to develop and validate a complex concept.
6.	Estimate agreement between methods, albeit cautiously in light of data distributions, using consensus and consistency procedures.	No	Not fully applicable. Methods were effectively blended in data collection (collected simultaneously) and in data analysis (aligned). Consistency between data rather than methods was part of data analysis.

Table C-7. Mixed method compliance across confirmatory and test case studies

C.4 Exploratory study specific details

C.4.1 Interview questions

Research Questions		Stage	Primary Questions
What is power?	Meaning	1	1. Could you explain how you understand power in a business context, what does it mean to you?
			2. Could you give examples of when you have experienced or observed power?
			3. How would you describe power?
			4. Does power mean something different to you in your personal life?
	Active	2	5. If you look at this table (Fig. 1) do these words describe power in some way?
What power characteristics are manifest? What are relevant power perspectives?	Partnerships (Context)	3	6. How would you briefly describe a supply chain partnership?
			7. Could you generally describe an example you know the most about?
	Experience		8. Could you describe your personal experience in this example?
			9. Could you describe the power that you experienced or observed?
			10. Did you achieve what you were responsible for?
			11. Did the partnership achieve its desired outcome?
	Active	4	12. Does this diagram (Fig. 2) represent the various powers you observed?
Interview Feedback	Experience	5	13. Did you find discussing power easy or difficult?
			14. Did you find the diagrams on power characteristics and perspectives helpful in expressing your thoughts?
			15. Has the interview changed your understanding of power?
	Improvements		16. Were the questions clear enough?
			17. Were there other questions, you think would have been useful to ask?
			18. How could this interview have been improved?

Table C-8. Staged interview primary questions

C.5 Confirmatory study specific details

C.5.1 Interview questions

Please indicate your ***understanding*** of each statement by adding the corresponding number (1-5)
(1) = Not at all; (2) = Limited (3) = Unsure; (4) = Mostly (5) = Fully

Please cross the most applicable box (1-5) for **agreement** level
(1) = Strongly Disagree; (2) = Slightly Disagree (3) = Unsure; (4) = Slightly Agree (5) = Strongly Agree

DEFINITION
The following <u>5</u> statements describe attributes of "power" in the context of
<u>inter-organisation relationships</u> that: "**Broadly captures the essence of power**"

Question: Power broadly means and is definable through the following attributes...?

A1	Expression	The enacted, multi-dimensional "influence process" governing
A2	Level	the overt and covert behaviour of social agents
A3	Variable	Multi-level and inter-level, operating at and between individuals; groups;
A4	Attribution	focal organisations; and the environment
A5	Assumptions	The central idea or concept is influence

CLASSIFICATION
The following 10 statements describe attributes of "power" in the context of
<u>inter-organisation relationships</u> that: "**Specifically defines and classifies power**"

Question: Power is specifically definable and classifiable through the following attributes…?

A6	**Relationship**	The specific social agents of each focal organisation (e.g. individual; group; organisation) and the type of relations (e.g. commitment level; co-operation) between these social agents
A7	**Dependence**	The type of dependence between social agents, which may be (1) elected (alternatives freely available) or not (restricted or no alternatives), (2) sought or not
A8	**Sources**	The sources or origins of dependence, which are physical or behavioural resources or factors attributed to a social agent that are valued by social agents
A9	**Means**	The acts of social agents that generate, maintain, or utilise power
A10	**Scope**	Its limits such as the type and number of social agents that are
A11	**Amount**	subjects of power and type of behaviour
A12	**Effects**	Its size, value, or extent across different dimensions or elements of the influence process
A13	**Objectivity**	The covert and overt behaviour of social agents
A14	**Motive**	Its existence as dependent on the mind (something perceived) or not (entity)
A15	**Time**	across different dimensions or elements of the influence process

Table C-9 *(Cont.)*

		PROPERTIES The following <u>5</u> statements describe attributes of "power" in the context of <u>inter-organisation relationships</u> that: "**Defines the nature of power**"	
		Question: Power exhibits the following attributes…?	
A16	**Connectivity**	Bringing together or into contact so that a real or notional link is established between	
A17	**Reciprocity**	the behavioural change in one social agent and another social agent	
A18	**Asymmetry**	Each social agent is a power subject of the other whereby power is moreover	
A19	**Dynamic**	enacted and negotiated rather than exercised	
A20	**Transparency**	An imbalance (1) through the one-way inducement of behaviour in a social agent, where there is not of necessity an equal and opposing behaviour, and (2) disparity in power reciprocity that is relative power	
		OPERATIONALISATION The following <u>5</u> statements describe attributes of "power" in the context of <u>inter-organisation relationships</u> that: "**Defines how power may be determined**"	
		Question: Power is determined through the following attributes…?	
A21	**Operational Definition**	Capturing the specific perspective of power that is to be empirically determined	
A22	**Measures**	Representation of the presence, size, amount, or degree of the specific perspective of power to be determined, which can be perception based or objective based	
A23	**Measurement**	Act of ascertaining Measures using an instrument or device marked in standard units	
A24	**Interpretation**	Establishing and communicating the meaning of empirical findings whereby the nature of the empirical evidence is central	
A25	**Generalisation**	The extent to which empirical findings may be deemed to apply generally in the social world and is a question of predictability	

Table C-9. **Leading questions for Interview Part A (Conceptual Framework)**

		Please indicate your **understanding** of each statement by adding the corresponding number (1-5) (1) = Not at all; (2) = Limited (3) = Unsure; (4) = Mostly (5) = Fully Please cross the most applicable box (1-5) for **agreement** level (1) = Strongly Disagree; (2) = Slightly Disagree (3) = Unsure; (4) = Slightly Agree (5) = Strongly Agree
		The following 15 statements describe "power" in the context of <u>inter-organisation relationships</u> in terms of: **"The components of the influence process"**
		Question: Power broadly means and is definable through the following attributes...?
B26	**Potential Influence**	Power exists in a potential state as *a potential ability* of: (i) A to govern the overt and covert behaviour of B, and (ii) A to behave freely from B
B27	**Actual Influence**	Power exists in a potential state as *some ability* of: (i) A to govern the overt and covert behaviour of B and (ii) A to behave freely from B
B28	**Enacted Influence**	Power exists in an enacted state where <u>*Actual-influence*</u> is activated or drawn upon governing the overt and covert behaviour of A and B
B29	**Value Resistance**	Power Sources** of A are valued differently by different social agents (A/B) (** *Physical or behavioural resources or factors attributed to a social agent that are valued by social agents*)
B30	**Importance**	The importance of power Sources of A to goal attainment of A and B, generates (i) dependence of B on A, and (ii) independence of A from B
B31	**Intrinsic Resistance**	The importance of A's power Sources to goal attainment of social agents is different for different social agents (A/B)
B32	**Environment**	Power relations with other social agents outside an A/B power relation also govern the overt and covert behaviour of social agents A and B
B33	**Behavioural Resistance**	Behaviour of social agents may be counter or aligned to the goals of social agents and limited by a social agent's capabilities
B34	**Motive**	Motive** of social agents (A/B) transforms Actual-influence into Enacted-influence (** *The conscious and sub-conscious <u>reason</u>(s) why social agents behave in a certain way and change behaviour*)
B35	**Means**	Power Sources of A may be generated and maintained by Means** of A and power Effects may be induced by Means of A, consciously or sub-consciously. (** *The <u>acts</u> of social agents that generate, maintain, or utilise influence*)
B36	**Process**	Potential-influence is the source of Actual-influence and Actual-influence is the source of Enacted-influence limiting power Sources to sources of Potential-influence and power Effects to B's induced Behaviour
B37	**Feedback / Feed-forward**	The components are inter-connected whereby a change in one component may result in a change in one or more of the remaining components
B38	**Black Box**	Actual-influence and Enacted-influence attributable to the AB relationship is a "black box" difficult to access
B39	**Power Efficiency**	Power efficiency in the AB relationships is represented by ratios between psychological forces: Enacted to Potential (F2 to F1) and behaviour changes (B2 to B1)
B40	**Power Effectiveness**	Power effectiveness in the AB relationship is represented by the ratio of behaviour induced (B2) to the attempted behaviour change (B3)

Table C-10. Leading questions for Interview Part B (Process Model)

		Please indicate your *understanding* of each statement by adding the corresponding number (1-5) (1) = Not at all; (2) = Limited (3) = Unsure; (4) = Mostly (5) = Fully Please cross the most applicable box (1-5) for **agreement** level (C41 to C43) (1) = Strongly Disagree; (2) = Slightly Disagree (3) = Unsure; (4) = Slightly Agree (5) = Strongly Agree Please cross the most applicable box (1-5) for **agreement** level (C44) (1) = None; (2) = Very Limited (3) = Unsure; (4) = SCM Role (5) = Senior SCM Role Please cross the most applicable box (1-5) for **agreement** level (C45) (1) = None; (2) = Very Limited (3) = Unsure; (4) = School Level (5) = Degree Level
C41	**Male Traits**	You exhibit tendencies of being: strong; competitive; independent; aggressive; tough-skinned; self-confident; hard; and active?
C42	**Female Traits**	You exhibit tendencies of being: nurturing; dependent; soft; sensitive; self-critical; emotional; and passive?
C43	**Deference**	You accept that all people are not equal, and it is natural that people rely on other people and function collectively?
C44	**Understanding – IOR Context**	What is your current level of understanding of the purpose and functioning of inter-organisation relationships?
C45	**Understanding – Natural Power**	What is your current level of understanding of power in the natural sciences (e.g. physics)?

Table C-11. Leading questions for Interview Part C (Secondary Conditions)

		Please indicate your *understanding* of each statement by adding the corresponding number (1-5) (1) = Not at all; (2) = Limited (3) = Unsure; (4) = Mostly (5) = Fully Please cross the most applicable box (1-5) for **agreement** level (1) = Strongly Disagree; (2) = Slightly Disagree (3) = Unsure; (4) = Slightly Agree (5) = Strongly Agree
D46	*** Validity / Reliability**	You found the questions difficult to answer?
D47	*** Validity**	You have been able to express fully your understanding of power in inter-organisation relationships?
D48	*** Validity / Reliability**	You have changed your understanding of what power in inter-organisation relationships is?
D49	*** Reliability?**	You have answered the questions in a very considered, open and accurate manner?
D50	*** Reliability / Validity**	You would most probably answer the questions differently if you were to complete the questionnaire again within 1 week?

*Note: validity / reliability relevance not visible to cases

Table C-12. Leading questions for Interview Part D (Reliability-Validity)

C.5.2 Analysis stages expanded

Stage 1: Descriptive statistical analyses based on raw questionnaire quantitative responses were conducted to profile case sector and IOR type experience and assess quantitatively perceived (raw data) theory divergence levels, case conditions, and reliability/validity. Cross-case secondary conditions and *perceived* divergences were assessed to determine whether variability was sufficient to evaluate secondary condition relevancy to theory intelligibility using fsQCA methodology.

Stage 2: Individual question qualitative responses were interpreted first independently then holistically based on all relevant interview data to arrive at a final interpretation for each question response. Interpretations were recorded directly in the data base (CADB 3). Quantitative data including descriptive statistics were then accordingly adjusted to capture actual intelligibility levels to inform sub-research question CS-RQ1.

Individual question qualitative responses included all explanations offered supporting quantitative responses including case experiences offered and written comments. Salient links between question responses were coded in dedicated columns permitting filtering and consolidating all data related to each question. Quantitative data was adjusted according with researcher assessment to enhance accuracy of alignment (consistency) with qualitative data.

Each question was further coded as having been consistent (C) or inconsistent (IC) and the rationale for all adjustments recorded. Substantive divergences were then type coded, as being due to understanding (U), and/or representing a theory gap (G), theory limitation (L), or theory error (E). Based on the pilot study each question was also coded as being primarily theory led (ED), predominantly *life experience* led (LE), or moreover both, through theoretical analysis (TA). Case based summary findings were tabulated and written case summaries were generated for reference.

Stage 3: moved to establishing case secondary conditions relevancy using fsQCA methodology (Appendix C.7.1) informing sub-research question CS-

RQ2.). Analysis primarily focused on case secondary condition relevancy to intelligibility levels (parts A and B) but included assessing implications for reliability and validity (part D). As noted in Appendix C.7.2, analysis was limited to necessary and sufficiency (N-S) analyses, based on X-Y plots.

Stage 4: The synthesis effectively moved from individual tabulated case summaries including all quantitative data, assigned codes (LE, TA, ED; U, G, L, A; C, IC), reasons for adjusting quantitative data, thematic based rationales for convergences and divergences, to consolidated summaries capturing cross-case data.

Consolidated summaries further captured any causal consistency (CC) or inconsistency (ICC) between the relevance of conditions tested (stage 3) and rationale for responses (stage 2). For example, if a given secondary condition were to be associated with divergence on intelligibility of attribute, means (fsQCA analysis) but the condition was found to have no discernible connection to the rationale accorded for divergence, this would stand as an inconsistency (ICC). Convergences and divergences were also coded to reflect commonality across at least two cases (COM), uniqueness to one case (UNI), or standing as contradictory across at least two cases (CONT).

Specifically for divergences, all were further evaluated as being either valid corrections necessary due to clear theoretical errors (VC) or reflecting under-explained power qualities pointing to the need/opportunity for valid enhancement of the theory (VE) or judged to be invalid standing as theoretical errors by practitioners (IV). Judgements were guided by level of case understanding, logic, and the literature. Captured was whether divergences were embedded in the theory based on core or periphery literature but evidently not sufficiently rendered clear, or had not been formalised within the theory, as presented. Essentially valid divergences represented either theory gaps or limits as under-explained IOR-power qualities to practitioners meriting theory re-descriptions.

Recognising inter-relationships between process components, and between the process model and conceptual framework, analysis turned to synthesis of all valid divergences to capture more concretely and thematically the overall explanatory

significance of divergences. The synthesis was both tabulated and comprehensively mapped as a means of mentally ordering, visualising, and absorbing holistically valid gaps and limits requiring resolution. In doing so, three conceptual routes emerged linking gaps and limits, enabling sense to be made of how to possibly address under-explained power qualities. The conceptual map is exposed in S-Appendix FR2-A.

C.6 Test case study specific details

C.6.1 Interview questions

No.	Question
1	Please could you identify from the attached list of people a person (Person B) with whom <u>your</u> working relationship is important, and broadly describe the relationship (purpose, roles, interaction, importance)?
2	How is Goal G (**Defined**) of relevance to <u>you</u>?
3	What enables and constrains <u>you</u> working towards achieving Goal G?
4	How does Goal G relate to <u>your</u> other goals (personal, team, organisation, partnership)?
5	Regarding Goal G, please could you describe what generally influences <u>your</u>: a) attitudes, b) opinions, c) decisions, and d) actions, and what does not?
6	In the organisation A-B partnership what / who do <u>you</u> consider to be very influential and why?
7	Regarding Goal G, please could you describe how Person B has influenced <u>your</u>: a) attitudes, b) opinions, c) decisions, and d) actions?
8	In working with Person B, please could you describe in as much detail as possible a significant occasion where <u>you</u> had to consider carefully an action <u>you</u> took concerning Goal G?
9	When (if) Person B asked <u>you</u> to do something concerning Goal G that you disagreed with, please could you describe in as much detail as possible what <u>you</u> did (would do) and why?
10	In the organisation A-B partnership what / who do <u>you</u> consider to be very powerful and why?
11	In the organisation A-B partnership, what is the difference between influence and power?

Table C-13. Main process interview questions

C.6.2 Analysis stages expanded

Stage 1 analysis generated case profiles, establishing the extent to which case conditions sought had been obtained across organisations. Progressively, thereafter during all analytical stages further profiles were generated to summarise quantitative data such as, theory divergence levels and gaps in evidential data. In addition, a map of all relationships explicitly drawn upon during interviews was constructed to capture first a basic perspective of the interwoven nature of relationships, and second where dyadic perspectives at the embedded case level had been obtained, that is properly reflecting an inter-personal relationship within or across organisation boundaries (Thompson and Walker, 1982).

Stage 2 analysis generated independently analysed, interpreted, and coded case transcripts. The full coding system is available in S-Appendix FR3-M. Through the use of vertical columns (CADB3) representing each quality (e.g. black box) and constructed drop-down menus capturing respective data codes (e.g. g-BB-1, g-BB-2 or s-BB-1, s-BB-2), narratives evidencing qualities were coded and summarised. For example, data code, g-BB-2 was applied and summarised as 'View of Self = Adaptable', for an embedded case (A4) describing in general ('g') a relevant *mental stance* (Appendix E.4.13) *prior* to engaging in tracing a specific process ('s'). Sorting functions permitted consolidating data by data type thereby assimilating case data at the sub-proposition level as evidence supporting or refuting propositions P1 to P10, under test (Appendix E.3).

As noted in the pilot study, interviews were dynamic. Participants naturally in describing experience moved between details of events to general aspects of events, and then across events, whereby ordering of questions became less relevant. The distinction between data classified as specific relating to questions 8 and 9 (Appendix C.6.1) and all other data classified as general, also became less prominent. Based on the pilot study, high levels of interrelationship between the two data types were anticipated. It was clear for example, that many cases had already explicitly framed or given specifics of the event selected for questions 8 and/or 9, in earlier descriptions, therefore avoided repeating all such factors. It

was also clear that general descriptions were easier to bring to mind and more naturally offered as discrete insights to a variety of events (psychological and behavioural) rather than recalling in a precise, comprehensive manner all such details for a given event.

Where interrelationships were clearly evident this either served as *confirmatory* data (repetition) or additional *contextual* data, that is captured the historical or future significance of the specific behavioural events described under questions 9 and 10. Thus, although coding distinctions were adhered to for reporting case data profiles, for interpretative analytical purposes (IPA), data was interpreted holistically (Chapter 3, Section 3.5.4). Correspondingly, process tracing (Chapter 2, Section 3.5.5) was completed at the general singular case level drawing on different perspectives offered of the end-to-end process across different events, whilst ensuring the integrity of the function and functional relation between components. This approach further supported anonymity and confidentiality when evidencing extensive narrative data (S-Appendix FR3-A1 and FR3-A2).

Guiding the analysis was the analytical sequence depicted in Figure C-3. Starting with goals (1), moving through to power (16), each component stood as a either an evidentiary general quality or a specific quality under test. The sequence constructed is not unique, in that other sequencing is feasible, but proved effective in logically moving from a discrete more accessible specific quality under test, goals, towards the most *embedded*, obscured and compound specific quality, Actual-influence. Thereafter, moving progressively broader towards exposing the full process, power, as contingent and indeterminate. The complete rationale is provided in S-Appendix FR3-M further explaining how evidencing general qualities supported verifying specific qualities. For example, *exposing* evidence of covert and overt effects, primarily enables drawing distinctions between such effects and outcomes.
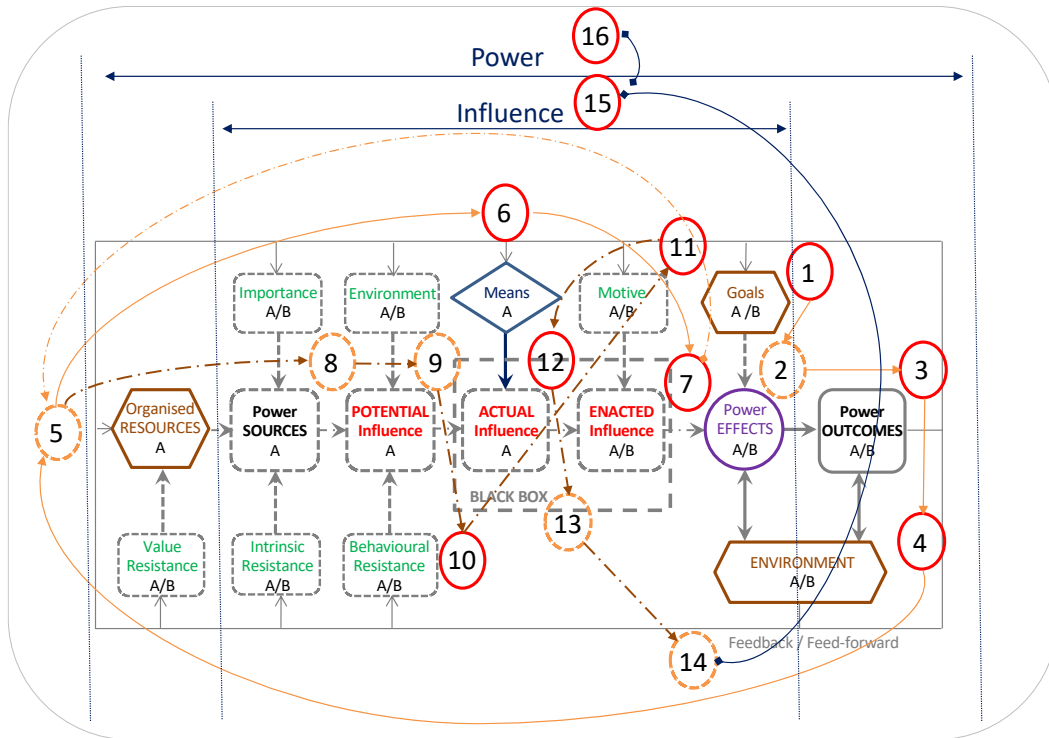
Figure C-3. Analytical sequence for evidencing power qualities

Lastly, in compiling evidence of general quality, feedback/feed-forward, including vertical, longitudinal, and horizontal extensions, use was made of the tailored process models generated in theory development phase 2 (stage 6). Based on what had been described, a tailored model(s) was selected to provide the simplest and most appropriate process perspective to ground tracing forward and backward links. For example, some descriptions utilised aligned more with an individual power-to process whereas others a power-over process. Sometimes power-over was active (means) and sometimes passive (no means), and so forth.

Stage 3 analysis in first generating 50 tabulated qualitative summaries, compiled examples of interview data from across *all* cases for each data type, masking specific names, places, and gender (all masculine) relevant to anonymity or confidentiality. In doing so, process general and specific, descriptive data, was aligned as evidence to support sub-propositions, and thereby propositions. The data was highlighted drawing attention to key words underpinning according descriptive relevancy (data type). Given inter-relatedness of power qualities, certain narrative data supported more than one sub-proposition, but to avoid

repetition and expose a range of data, where possible alternative text was used albeit not necessarily offering the same strength of support.

In constructing the tabulated summary of proposition data coverage across all cases in table form, evidence gaps, that is where no clear corresponding data emerged from the case interview to support a proposition were re-confirmed by revisiting case transcripts. Notwithstanding, gaps had been anticipated for certain data types, most notably erroneous behaviour (deviant behaviour), and expected subject to the descriptive focus participants adopted. Participants were unaware of the specific data being sought, and although a level of probing opened certain avenues of inquiry, leading participants was avoided.

Based on the preceding analyses, collective evidence (both organisations) was captured quantitatively. Levels of theory support were computed and presented graphically exposing distinctions between theory general qualities and theory specific qualities, and between evidence sources from specific versus general process descriptions. Analysis included a comparative analysis between organisations, to explore for evidence patterns suggesting specific organisation membership had bearing on the findings.

Stage 4 analysis of definition intelligibility levels based on qualitative analysis was preceded by content analysis of all interview data to assimilate into a dedicated table by case, all data directly informing intelligibility of power and influence definitions. Predominantly, data lay in responses to questions 6, 10, and 11 (Appendix C.6.1). General and specific aspects of fsQCA methodology employed is summarily provided in Appendix C.7.

C.7 Fuzzy set Qualitative Comparative Analysis (fsQCA)

C.7.1 General overview

Aligned to a dialectical critical realism perspective, the method assumes complex, non-linear versus singular, linear causal relationships between variables and outcomes that in this research corresponds to participant attributes (conditions) and meanings attributed to IOR-power by participants (outcomes). The method employs set-theoretic methods using Boolean and ($\bullet$) / or (+) logical operators (Fiss, 2007) that embraces configurational theory:

> "Configurational theory suggests a clean break with the predominant linear paradigm. Rather than implying singular causation and linear relationships, a configurational approach assumes complex causality and nonlinear relationships where "variables found to be causally related in one configuration may be unrelated or even inversely related in another" (Meyer et al., 1993: 1178)... Set-theoretic methods are uniquely suitable for configurational theory since they explicitly conceptualize cases as combinations of attributes and emphasize that it is these very combinations that give cases their unique nature." (Fiss, 2007 p.1181)

Three complex causality concepts capture the essence of configurational theory, the first being *conjunctural causation*, where two or more variables jointly rather than severely are associated with an outcome. The second *equifinality*, is how a system starting from different initial conditions can reach the same final state through different paths. Lastly, *asymmetry*, that is how causes leading to the presence of an outcome may be different from those leading to the absence of the same outcome (Fiss, 2011). Other methods fall short in accommodating or fully respecting complex, non-linear causality relationships not least in treatment of variables as competing rather than combining to generate outcomes (linear regression) or not accounting for relationships between variables (cluster analysis) (Fiss, 2007).

Importantly, the method may be used in small N research that does not permit large N statistical inferences to be drawn but where more in-depth knowledge of cases enables analysis of combinations of conditions to identify meaningful patterns. Especially in complex cases demanding thorough understanding, it

provides an effective blend of qualitative and quantitative approaches and the techniques employed facilitate replicating studies (Greckhamer et al., 2018; Häge, 2007; Jordan et al., 2011). For conditions that are not binary yes (1), no (0) rather exhibit degrees of presence such as theory intelligibility and management seniority, fuzzy sets may be used to capture degrees of presence as degrees of set membership (theory intelligibility, management seniority).

Assessed to be the most used computational software employed (Thiem and Duşa, 2013), fs/QCA software was used in accordance with its user guide (Ragin and Davey, 2008, 2017). The method involves eight steps: case selection, calibration, necessary-sufficiency (N-S) analysis, truth table construction, minimisation, computing results, results presentation, and interpretation (Fiss, 2007; Greckhamer et al., 2018; Meuer, 2011). The following summarises each step to assist interpreting findings presented in Appendices C.7.2 and C.7.3.

Step 1: case selection covered generally in Chapter 3, Section 3.4.1 and specifically in Appendix C.3.1 included case conditions (primary or secondary attributes) that might contribute to variations in the specific outcome of interest in this analysis, theory intelligibility. These were identified from the literature, for example deference (Zhuang and Zhou, 2004) and possibly supported by prior empirical data, for example understanding of natural power (Case A, exploratory study (ES); Gaski, 1994). For fsQCA to offer utility, cases were required to display a degree of variability in these conditions and outcomes. Although variation in conditions was sought, until all secondary attribute data was gathered it was not possible to assess condition variability and the utility of fsQCA in this research. In addition guidelines on the ratio of number of conditions to cases (design measure) required consideration to seek configuration models not overly based on random data (not real empirical evidence) and to avoid too high complexity whereby all cases are rendered unique (Marx, 2010).

Step 2: calibration refers to the design of the measurement scale by which membership of a defined set representing a condition or outcome is made meaningful. Set membership is captured in quantitative terms as, full membership (binary 1), or full *non* membership (binary 0), or the mid-point scale position

reflecting the highest point of ambiguity where it is *unclear* if membership is or is not the case (0.5), or as a pertinent, *intermediate* membership status, for example more in the set than out (0.75). Sets were defined and calibrated accordingly to reflect the type of condition ranging from 3-point scales (0, 0.5,1) through to 7-point scales (0, 0.2, 0.4, 0.5, 0.6, 0.8,1). Each case was accorded membership in the relevant sets based on qualitative and/or quantitative data obtained from case interviews. Data sheets formatted for direct use in the fsQCA software were generated and included computed configurations representing combinations of conditions using Boolean logical '*and*' (lowest membership value) thereafter '*or*' (highest membership value) operations that assigns two possible extreme set membership values to condition combinations for use in step 3 analysis only.

Step 3: necessary-sufficiency (N-S) analysis is an important preliminary step in distinguishing between conditions that are necessary (superset) where the outcome can *only* be achieved where the condition(s) is present and conditions that are sufficient (subset) for the outcome where the outcome will be achieved *if* the condition(s) is present (i.e. other conditions if present can equally yield the same outcome), and conditions that are both. In this study, N-S analysis was computed using the fs/QCA software that generated X-Y (condition/outcome) plots and consistency levels to assess conditions as necessary (0.92 threshold) or sufficient (0.8 threshold) or both. This was repeated manually using excel to better represent graphically empirical case patterns. Following the arguments of Goertz (2006) and Schwellnus (2013) this enabled assessment of the *relevancy* and *trivialness* of both necessary and sufficient conditions, including computed variables, as shown in Figure C-4. The X-Y plot is divided first along the diagonal line where above the line signifies sufficiency (subset) and below the line, necessity (superset) thereafter into quadrants capturing how cases and conditions may be deemed supportive, contradictory, irrelevant, or trivial to justifying causal relationships between condition(s) and outcome.
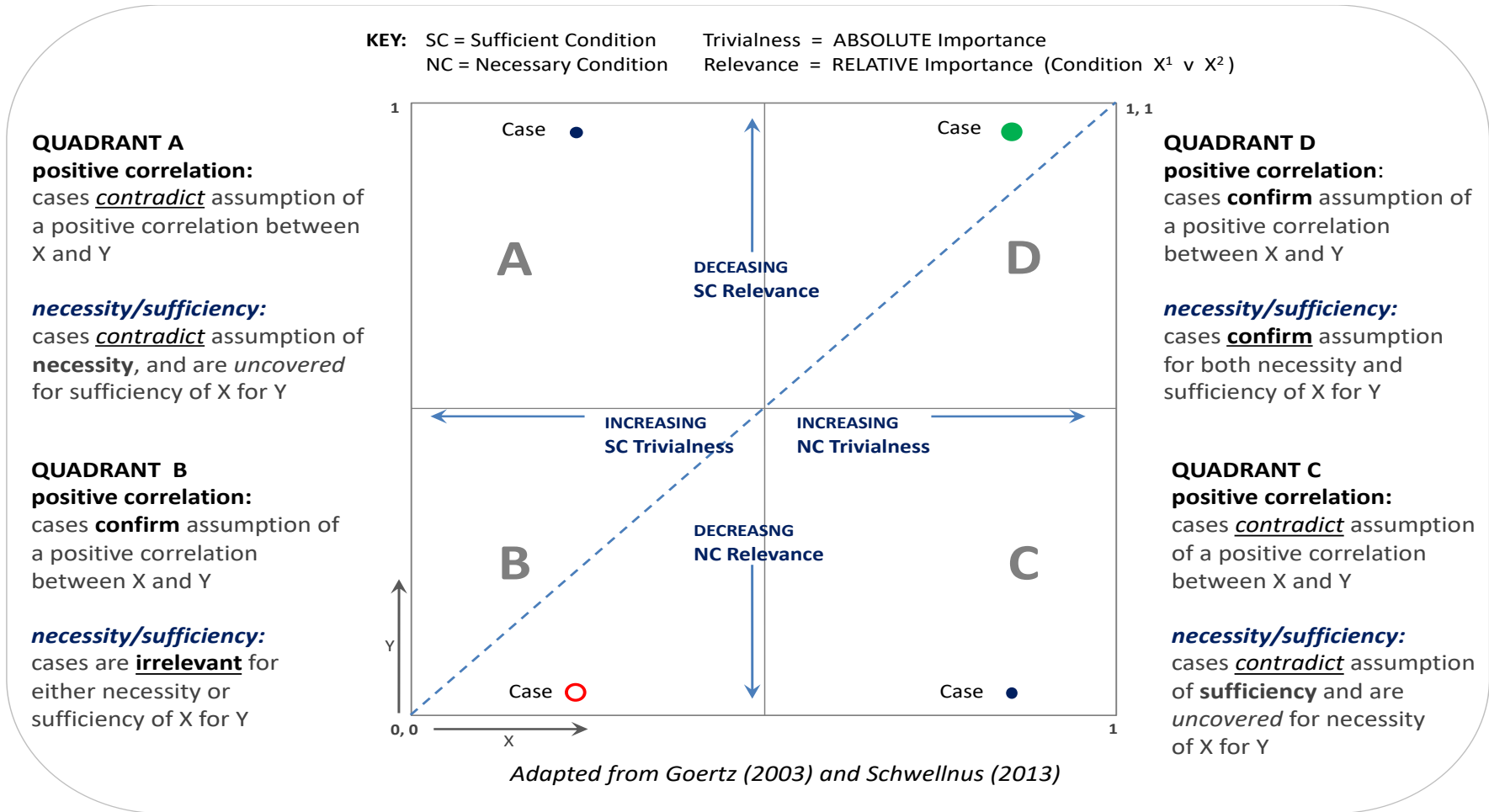
Figure C-4. Evaluation of necessary and sufficient case conditions

The N-S analysis was informative in distinguishing conditions that independently are not highly relevant or trivial, referred to as trivial, and in profiling case relevancy. Notwithstanding, the main purpose of fsQCA is to explore and expose which *combinations* of conditions are most likely sufficient to generate an outcome where conditions may be independently trivial or insufficient but contribute *proportionally* or in a conjunctural manner as sufficient for an outcome (Goertz, 2006; Ragin and Davey, 2017).

Step 4: truth table construction is based on Boolean logic that recognises not only empirically observed configurations of conditions, but all logically possible configurations associated with the outcome of interest given by the formula 2^k, where k is the number of conditions (5 conditions = 32 rows). Empirical study samples whether small N or large N often cannot or do not contain cases exhibiting all possible condition configurations, referred to as limited diversity (Fiss, 2007). As such, each row in a truth table constitutes a configuration as a Boolean function, representing *empirical* cases that in terms of the outcome either consistently yields the outcome (1) or consistently does *not* yield the outcome (0) or are contradictory, that is, sometimes yields the outcome (C), and importantly all *logical* remainders that is, logical cases for which there is *no* empirical evidence (?). Correspondingly, the level of empirical diversity underpinning a truth table is the proportion of the number of rows in the truth table containing empirical cases to the total number of truth table rows (2^k), expressed as a percentage (Ragin and Sonnett, 2005). Truth tables were generated directly and automatically within fs/QCA using set data sheets (generated in CADB3) containing all case conditions and outcomes, set membership scores (step 1).

Step 5: minimisation is the reduction of truth table Boolean functions representing every possible configuration of case conditions to configurations that should result in the outcome in question based on a holistic view of the data. This is not a fully automated computational process and requires careful consideration by the analyst commencing with defining *thresholds* for the minimum frequency (number) of *empirical* cases exhibiting a configuration (truth table row) and minimum consistency thereof in yielding the output, for inclusion

of the configuration in developing a Boolean solution. Frequency and consistency thresholds applied to empirical *instances* normally results in reducing the truth table but ideally retains at least 75% of cases (Ragin and Davey, 2017). Following guidelines and benchmarks for small N studies, frequency was set as 1 (single case) and a consistency threshold of 0.8 was employed across all analyses. Further minimisation is achieved through examining theoretical or substantive justification for excluding logical remainders (no empirical instances ?). Logical remainders were considered first in a counterfactual analysis as to the reality or possibility (impossible; possible but does not exist; possible and do exist) of such configurations (e.g. pregnant and male?) enabling a more meaningful and potentially parsimonious solution. In this research there were *no* reality configurational limitations given no conditions were held mutually exclusive.

Logical remainders thereafter may be treated either *conservatively* by excluding all remainders generating a *complex* Boolean solution purely based on empirical instances, or *output enabling* by selectively including some remainders based on theoretical or substantive grounds possibly generating an *intermediate* or simplified Boolean solution, or, included whenever a purely logically simpler Boolean solution may thereby be obtained generating a *parsimonious* solution. In set terminology this translates to the complex solution being a sub-set of the intermediate solution, and in turn a sub-set of the parsimonious solution.

Theoretical justification for including conditions or configurations and assumed relevance varied in this research. For example, in the confirmatory study expert understanding of natural power was considered likely to contribute to according agreement to a distinction between potential, actual, and Enacted-influence but likely irrelevant or trivial to according significance to attribute dependence. Similarly, in the test case study, holding a commercial role was expected to contribute to the outcome (agreement with influence and power definitions), whereas reflection time prior to the interview was expected to be trivial or irrelevant. These assumed causal relationships translate into specifying in an fs/QCA standard analysis, whether the presence, absence, or either (presence

or absence) of the condition should contribute to the outcome, to enable generating an *intermediate* or simplified solution.

Step 6: computing results using standard analysis method in fs/QCA provides all three Boolean solutions (complex, intermediate, and parsimonious) and is the only means to generate intermediate solutions. The standard analysis method was used to efficiently analyse different configuration models capturing posited theoretical causal relationships between conditions and outcomes. The results are generated as data analysis sheets in the system providing Boolean solutions (complex, intermediate, parsimonious), consistency and coverage values for each *solution* and for each Boolean term (configuration) in each solution type (complex, intermediate, parsimonious), and causal assumptions. Figure C-5 uses a test case study example to depict the format of results. Abbreviations such as COM, are conditions being evaluated, the Boolean logical *and* operator (•) is represented by the symbol * (conjunctural causation), and each term (line) combine through Boolean logical *or* (+) as the solution, representing in this case two pathways to obtaining the outcome (equifinality).

Complex Solution
MatP (present)
COM (present)
SML (present)
Cent (present)

* **Boolean logical AND**
~ **Boolean logical NOT**

	raw coverage	unique coverage	consistency
MatP*~COM*Cent	0.488	0.488	0.848485
~MatP*COM*~SML*~Cent	0.138	0.136	1

OR

Solution coverage: 0.584
Solution consistency: 0.879518

Figure C-5. Solutions represented in Boolean logic terms

The distinction between consistency and coverage (raw and unique) as central measures employed to assess causal relationships is more simply explained using crisp sets that have binary set membership (1 or 0). Depicted in Figure C-6 as an imaged but related example, are two independent sets representing all cases exhibiting experience, first in senior management (18 cases) and second commercial negotiation (15 cases), each standing as subsets of an outcome set

of cases that accord agreement with a definition (24 cases). There are 3 cases that exhibit both types of role experience and 3 cases that accord agreement but exhibit neither type of role experience. Displayed consistency and coverage scores are determined and carry meaning as follows.

Consistency for senior management is the proportion of all cases with senior management experience that contributed to the outcome (10/18) and is 0.555 contrasted with the consistency of commercial experience (14/15) that is 0.933. Based on a consistency threshold of 0.8 (step 5) only commercial experience would be considered independently causally related to the outcome, that is a sufficient condition to agree with the definition (outcome). Turning to coverage, first raw coverage is given by the number of cases exhibiting a type of role experience and according agreement, as a proportion of all cases according agreement (24 cases). For senior management, raw coverage is thus 0.417 (10/24), and for commercial is 0.583 (14/24). Given three cases exhibit both types of role experience, unique coverage for senior management is therefore 0.292 (7/24) representing the proportion of the outcome attributable to this type of experience alone and logically is always less than or equal to raw coverage, and for commercial is similarly 0.458 (11/24).
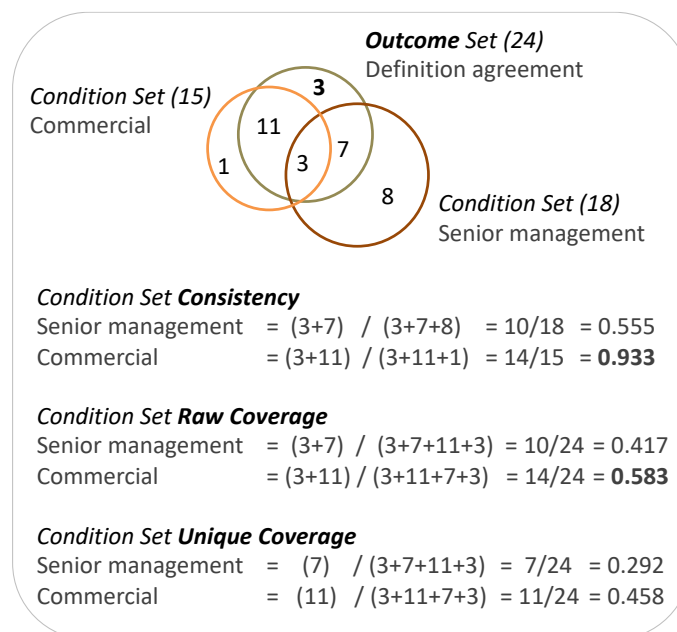
Figure C-6. Condition subset consistency and coverage determination

Thus across all cases (24) according agreement, commercial role appears to consistently explain the majority of case agreements (consistency 93%; raw coverage 58%; unique coverage 46%) whereas senior management role does not (consistency 55%; raw coverage 42%; unique coverage 29%).

The method of calculation for fuzzy sets is more complex but the principles and significance of the measures stand (Ragin and Davey, 2017). For a given solution (complex, intermediate, or parsimonious) the consistency value for each configuration (Boolean term) indicates the extent to which partial membership of *all* empirical cases (original data set) in the configuration is consistent with (subset) the outcome. Raw coverage indicates how much of the outcome is explained by partial membership in the configuration, and unique coverage how much of the outcome is solely explained by partial membership in the configuration. Unique coverage thus indicates the relative importance of the configuration in yielding the outcome. Thereafter, *solution* consistency indicates the extent to which partial membership in the solution as a whole (all Boolean terms) is consistent with and thereby a subset of the outcome and *solution* coverage correspondingly indicates the extent to which the outcome is explained by the partial membership in the complete solution (Ragin, 2006; Ragin and Davey, 2017).

There are however no strong guidelines as to what constitutes an acceptable level of coverage to deem a configuration or solution significant in explaining an outcome rather it is for the researcher to assess based on case knowledge guided by theory and aims of the research (Greckhamer et al., 2018). In this research, emphasised as being exploratory, and related to complex individuals where an abundance of conditions not under evaluation may have bearing, a minimum coverage of 50% (0.5) was employed at the respective levels of analysis (conditions, terms, solutions) indicating an above average level of significance meriting consideration in explaining IOR-power intelligibility levels. Returning to N-S analyses (Figure C-4), for a relatively high sufficiency value the necessity value may be interpreted as coverage and vice versa (Ragin and Davey, 2017).

Lastly, acknowledging asymmetry as feasible, all configurations analysed were also examined for outcome causal asymmetry (Greckhamer et al., 2018). Theoretically no configuration was expected to yield the absence of the outcome however conducting the analysis contributed to reinforcing or otherwise the specified causal relationship and possibly unearthing unexpected inverse causal relationships. Furthermore, whilst adopting substantive or theoretical knowledge enables embracing non-empirical cases and thus is an approach to overcoming limited diversity, for descriptive and interpretative purposes the level of diversity underpinning plausible solutions (consistency and coverage satisfied) was determined from the corresponding *truth table* (Ragin and Sonnett, 2005).

Step 7: results presentation for different stages and levels of analysis were generated and are compiled in the respective data analysis and findings appendices for the confirmatory (CS) and test case (TS) study where fsQCA was used to explore intelligibility levels (FR-2.2 and FR-3.2). Although tailored to each study and noting analysis was limited in the confirmatory study (Appendix C.7.2), case descriptive statistics, N-S analysis X-Y plots, tabulated N-S consistency levels, nested truth tables (rows containing cases) integrated with solutions revealing significant cases, configuration solution charts, and a range of tabulated data and analysis summaries are presented in the appendices generally following standard formats. Distinctions are drawn between *core* conditions that are part of both parsimonious and intermediate solutions, *peripheral* or complementary conditions that are not (Fiss, 2011), and *necessary* conditions, recognising necessary conditions are often omitted from parsimonious solutions.

Step 8: interpretation importantly recognised critical views of the computational techniques underpinning *fuzzy* set-based solutions, and more generally QCA as a method aimed at combining qualitative and quantitative methods. First, are how fuzzy set consistency levels reported in truth tables and consistency levels reported in solutions do not represent the same measure of consistency. Truth table consistency captures consistency levels of *only* those cases with set memberships greater than 0.5, or good cases whereas the Boolean term and solution consistencies include *all* cases with membership in the condition term

and therefore may include irrelevant or bad cases (Cooper and Glaesser, 2011; Goertz, 2006). This is what has been critically referred to as irrelevant data entering through the back door.

Second, inclusion of irrelevant or bad cases raises a problem of paradoxical results due to asymmetry where cases included may actually support both the outcome and its negation (Cooper and Glaesser, 2011). Development of a consistency measure for fuzzy sets has been developed, the proportional reduction in consistency (PRI) measure to address negation. This does not however fully resolve the problem for irrelevant or poor cases generating *false positive* results (Braumoeller, 2015; Schwellnus, 2013). There are calls for more stringent method testing especially in dealing with limited diversity (<75%) and the impact of mis-specified causal models on intermediate solutions (Baumgartner and Thiem, 2020).

Lastly, and most critically in addition to the above is the *rejection* of claims that first the method *is* deterministic and thereof unearths deterministic necessary and sufficient causal relationships, second, deals appropriately with over-determined outcomes, third, is replicable and thereof reliable, and fourth, appropriately draws on statistical methods (Lucas and Szatrowski, 2014). Ultimately it is argued that the method neither does justice to the richness of recognised qualitative methods nor the rigour and standards of quantitative methods and may lead to ignoring valuable cases and/or erroneous conclusions (Lucas and Szatrowski, 2014).

Overall, the above criticisms were born in mind when interpreting data whilst embracing the underlying rationale of a set-theoretic approach. The method was employed in an exploratory and implicatory, not deterministic manner. Limitations such as the relatively weak theoretical grounds supporting intermediate solutions and how certain *empirical* based set calibrations relied on interpretation of case data were noted. It was not however considered pertinent to conduct robustness checks through altering these calibrations (Greckhamer et al., 2018) as there was no justifiable reason to do so without falling into a sense of data manipulation. Furthermore, although results were interpreted based on consistency and coverage levels jointly as a measure of fit (sub-set condition / outcome set) this

was complemented with case knowledge and conservatism. Diversity levels were calculated for plausible solutions. Exemplary X-Y plots were further generated to assess the proportional contribution of irrelevant and bad cases to solutions, levels of over-determination, and remain sensitised to case patterns (Figure C-4).

C.7.2 Confirmatory Study (CS)

Data Collection

Part C of the interview obtained participant self-assessment of 5 secondary conditions possibly relevant to according theory intelligibility: male traits, female traits (Bem, 1974; Caspi, Roberts and Shiner, 2005; Matthews, Deary and Whiteman, 2003; Skoe et al., 2002); deference (Zhuang and Zhou, 2004); understanding IORs, and understanding natural power (Nailen, 1996; Risjord, 2009). The theoretical basis for targeting these conditions is exposed in S-Appendix FR2-M such as gender conditioning moral thought and understanding of social relationships and thereby meaning attributed to power. For example, masculinity is associated with an instrumental orientation and cognitive focus on getting a job done (male trait) contrasting with femininity associated with an expressive orientation and affective concern for the welfare of others (female trait). Traits however are *not* held gender restricted, that is given by formal biological classification (male, female), and thus required consideration by participants in interviews.

Data Analysis

Stage 3: Researcher adjusted responses to part C (participant self-assessment), deemed to reflect more accurately case secondary conditions were used to assess relevancy to intelligibility levels. Fuzzy set membership in each condition set was established and similarly for each outcome set based also on adjusted responses to part A (25 attributes) and B (15 components) and part D (5), where each response thus stood as a discrete outcome. The sets employed are displayed in S-Appendix FR2-M, of which there are 2 *types* of set membership calibrations. The first accorded with the standard Likert scale responses employed (strongly agree, slightly agree, unsure, slightly disagree, fully agree) across *all* questions except for two customised scales used to capture levels of understanding (IOR, natural power) for which a second set membership scale was employed.

Given the small number of cases, the analysis was limited to necessary and sufficiency (N-S) analyses, based on X-Y plots (Appendix C.7). Each condition was plotted independently for each outcome, then in combination (all conditions) using Boolean 'and' set logic (lowest set membership), thereafter Boolean 'or' set logic (highest set membership). All plots were evaluated and interpreted to draw conclusions of what, if any, condition, or configuration of conditions (male traits, female traits, deference, IOR understanding, natural power understanding) may have led to theory divergences or been implicated in reliability and validity of case explanatory critiques. In doing so, qualitative answers to sub-research question CS-RQ2 were obtained (Chapter 5, Section 5.3.4).

C.7.3 Test Case Study (TC)

Data Collection

Given the number of embedded cases, conditions explored were limited to conditions whereby the requisite data was readily accessible through case selection (Appendix) or in the course of conducting the interviews, to not detract from the primary aim of obtaining data to test the theory.

First, conditions explored related to generational core values (Abramson, 2019; Fengler and Wood, 1972; Lewis, 2011; Parry and Urwin, 2017), and second, to mature perspective (age) representing experience and knowledge of power types (Nye Jr., 1990; Stannack, 1996), that may be linked to, but not necessarily, senior management level, reflecting exposure to leadership and its challenges (Byrd, 1987; Ladkin and Probert, 2021; Smeed et al., 2009), thereafter commercial role experience and lastly centrality based on the exploratory study (ES), where cases in exhibiting these conditions displayed sensitivity to the complexity of IOR-power and drew distinctions between power and influence. The theoretical bases for selecting these conditions and posited relevance are tabulated in S-Appendix FR3-M.

For example, from the literature, values accorded to the baby boomer (GenBB) generation (born 1946-1964) that of valuing flat hierarchies, democratic cultures, and team-work, were held to implicate a dislike for misuse of power and preference for influencing behaviour. Notwithstanding, experience and acceptance of formal authority was posited as sufficient for theory intelligibility (posited convergence). In contrast, generation Y (GenY) born 1980-1996 espoused to question authority, valuing civic duty, morality, and street smarts, were held to possibly see power as limited by collective action, and consider influence as power, leading to challenging of the distinction drawn, thereby intelligibility of the theory (posited divergence). Notwithstanding, relevancy of generational values was highly tentative given how generations are distinguished and values are assigned was not without challenge (Parry and Urwin, 2017).

The rationale for exploring commercial role (COM) and centrality (Cent) emerged given both appeared to have bearing on distinguishing between power (outcomes) and influence (behaviour) in accordance with the theory. Through exposure to formal IOR commercial negotiations, influence, was readily viewed as integral to outcomes and similarly teamwork across organisation boundaries, yet, obtaining desired outcomes distinctly different and salient, *ultimately* subject to formal hierarchies and power distribution (customer versus supplier; parent company versus joint venture). Both conditions were thereby expected to contribute to theory intelligibility (posited convergence).

Lastly, to test the relevance of deep evaluation processes and learning, given both are central to the theory, reflection time (RTime) before the interview, and *formal* gender (FEM) were tested as being superficial and trivial to intelligibility level. Moreover, theory intelligibility was theorised to more likely emanate from prior learning and *how* reflection is undertaken (Le Cornu, 2009; Fleming, 2007).

Data Analysis
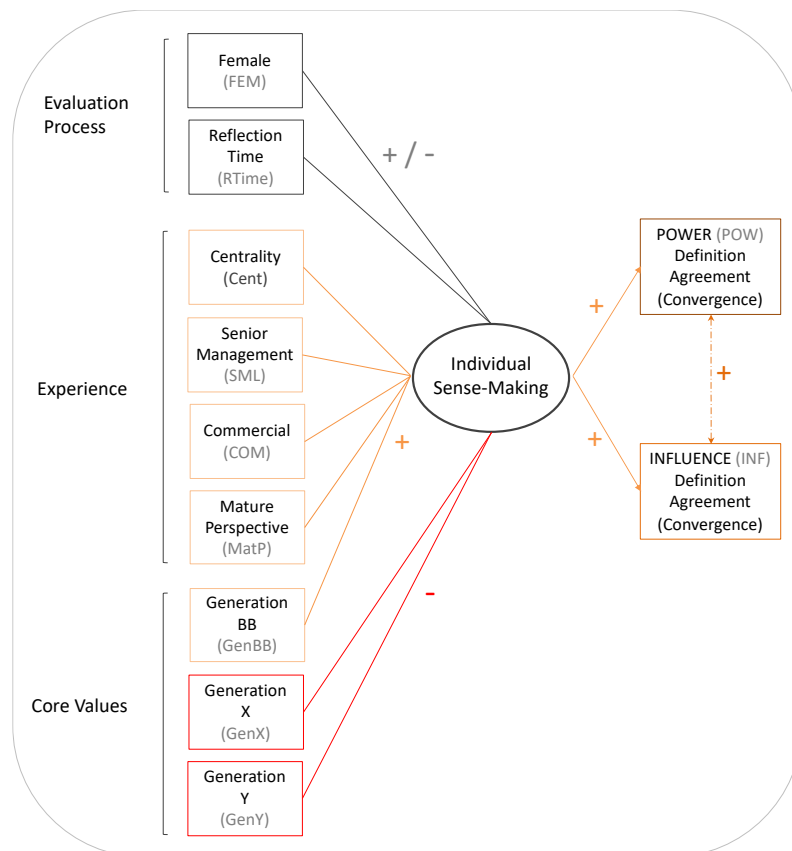
Figure C-7. Theoretical model M1 depicting intelligibility causal relationships

Stage 4: After generating descriptive statistics displaying theory intelligibility levels and case conditions under evaluation, analysis thereafter divided into two distinct fsQCA analyses, analysis 1 and analysis 2. Analysis 1 was based on intelligibility levels accorded by participants hereafter referred to a *perceived* level of intelligibility. The analysis was led by a *theoretical* configuration model, M1, shown in Figure C-7, annotated as M1p for analysis 1, depicting the theorised *independent* causal relationship between each condition and intelligibility levels. Included further is the causal inter-relationship between definition agreements where agreement with influence was posited to be a sufficient *condition* to generate agreement with power and vice versa. In total therefore were 10 conditions potentially relevant to explaining intelligibility levels. As noted, the rationale for these relationships is provided in S-Appendix FR3-M.

Analysis 1 followed fully the analytical process described in Appendix C.7.1, steps 1 through to 8, given in contrast to the confirmatory study (Appendix C.7.2) there were sufficient cases to compute meaningful configuration solutions (21 cases). N-S analysis for independent conditions generated 12 X-Y plots related to influence as the outcome, and a further 12 X-Y plots related to power as the outcome, both including evaluation of power and influence as conditions and in part explored asymmetry. Thereafter, a further 13 meaningful combinations of conditions (c1 to c13) generated 15 X-Y plots for influence, and similarly 15 X-Y plots for power, as outcomes. Evaluation and conclusions drawn of all X-Y plot case patterns led to a *revised* theoretical model M2p. Corresponding N-S computed consistency levels also led to a *revised* configuration model, M3p. Both M1p and M3p models were employed separately to theoretically guide generating *intermediate* or simplified fs/QCA computed solutions using the standard analysis option (step 6).

Guiding step 6 of the analysis based on the M1p model, ignoring case number to condition ratio limits (step 1), were fourteen condition configurations (C1 to C14). Where configuration C1 incorporated all types of conditions, that is evaluation, experience, and core values (9 conditions), C2 through to C7 configurations tested types of conditions independently thereafter all possible combinations.

179

Configuration C2, for example, tested experience conditions alone (4 conditions), whereas configuration C7 tested both evaluation process and core values (5 conditions). Configurations C8 through to C14 were the same as C1 to C7 but also included condition influence for analysis of power as the outcome, and similarly condition power for analysis of influence as the outcome. In all analyses, asymmetry was equally tested. In total therefore, across power and influence in analysis 1, 56 computed complex solutions were generated based on model M1p, standing as descriptive solutions, and for some configurations, intermediate, and parsimonious solutions were further determined.

A similar analysis was completed based on the M3p model, that was a simpler model given the results of the N-S analysis. Model M3p was generated by formally excluding all conditions that independently did *not* satisfy the consistency and coverage thresholds for sufficiency (0.8; 0.5). Model M3p became reduced to a model capturing conditions sufficient to generate influence agreement only, where conditions were otherwise trivial in generating power agreement. In addition, case number to condition ratio guidance was followed in this analysis, where given the number of cases (21), only configurations containing at least 4 variables were included. The analysis thereby became further limited to testing only 8 of the 14 configurations conditions (C1 to C14). Essentially, where model M1p analysis offered every possibility of generating *theory driven* plausible solutions, model M3p stood as a more conservative and robust *empirically driven* model of the explanatory significance of conditions.

The final part of analysis 1, was interpretation of the findings. Guided by *solution* consistency and coverage thresholds, foremost all model M1p *computed* plausible solutions were assessed for theoretical grounding, to ensure solutions did *not* contain inherent theoretical contradictions. For example, posited causal relationships for core values were theoretically interlinked and two generations posited to generate disagreement. Thus a solution that relies on a *positive* rather than negative causal relation for these generations, loses theoretical grounding, that is, stands as theoretically implausible according to model M1p. For model M1p, theoretically supported solutions only were embraced as plausible.

Thereafter, to aid interpretation, X-Y plots for all model plausible solutions (M1p and M3p) were generated based on fs/QCA computed case membership scores. This revealed case patterns and thereby levels of over-determination, reliance on trivial cases, and exposed contradictory cases. Configuration solution charts, displaying *core*, *peripheral*, and *necessary* conditions, were also generated to identify patterns across solutions to aid interpretation. Diversity levels were further computed. Based on an overall interpretation of the data, developed was a *tentative* empirical based explanatory model, E-Mp, of case conditions that independently and *jointly* contribute to perceived theory intelligibility.

Analysis 1 was based on perceived intelligibility levels accorded by participants. In assessing high level definitions, participants relied heavily on interpretation of broad concepts (govern, process, behaviour, outcomes), unaware of the full significance of each. Accorded levels of agreement did not fully align with accompanying explanations or data gathered through the course of the interview. Analysis 2 thus first established more accurate levels of actual intelligibility, as *adjusted* intelligibility levels, based on researcher interpretation of qualitative data and full knowledge of the theory. For each case, tabulated qualitative summaries were compiled exposing raw interview data related to interpreting *actual* intelligibility levels and the rationale for adjustments made to quantitative scores. Cross-case summary tables were further compiled, revealing first common themes across cases that explained perceived levels of divergence, second, all quantitative adjustments thereby justifiably made, and lastly thematically across cases what actually prevented cases from according full agreement. Corresponding descriptive frequency profiles were also generated exposing thematically first factors generating justifiable adjustments, thereafter actual divergences in intelligibility, distinguishing between organisations.

Analysis 2 then replicated all analyses conducted in analysis 1, from descriptive statistics through to configuration solution charts and establishing a tentative empirical based explanatory model (E-Ma). Where models were annotated with subscript p, in analysis 1, all models were annotated with subscript, a (M1a, M2a, M3a, E-Ma), in analysis 2. The distinction between the analyses thus lay solely

in analysis 1 explaining *perceived* intelligibility levels versus analysis 2 explaining *actual* intelligibility levels. Notwithstanding, actual intelligibility levels (analysis 2) displayed limited outcome variation across cases, rendering explanatory model E-Ma, although more accurate, also inherently more tentative. An analysis summary process map is provided in S-Appendix FR3-M.

Finally, the possible practical challenges faced in seeking alignment between practitioner attributed meanings of power and the theory were synthesised. Where fs/QCA computed solutions provided substance to the relevancy or not of generational core values, experience, and evaluation processes, qualitative analysis provided further rich insights to why differences arose between perceived and actual intelligibility levels, thereafter discernible substantive divergences in meaning attributed to power that arose.

Appendix D Theory

D.1 Conceptual framework – Attributes

Attribute	Type	Definition
Expression	DEFINITION	IOR-power is an indeterminate, emergent, and downwardly inclusive, social and natural process, governing IOR Outcomes.
Level		Grounded at the individual level and emerges as multi-level and inter-level, operating at and between individuals, groups, organisations, and the environment (social and natural).
Variable		Influence is the central process where the core mental state of Actual-influence (self and attributed) is the most central variable.
Attribution		Anchored in a relevant outcome as a relational process occurring between social agents conditioned by the environment is thereby attributable to all contributing agents where attributing IOR-power independently to any agent may not be readily discernible.
Assumptions		A *central* justifiable assumption is that Individual humans are indivisible, semi-autonomous beings with identities and goals, endowed with behavioural and physical resources providing capabilities and liabilities to act whereby further justifiable assumptions are necessary to obtain a meaningful perspective of power at the IOR level.
Model Components	CLASSIFICATION	See PROCESS MODEL Descriptions **[Table D-2]**
Perspective		Perspectives of IOR-power are given through orienting the process model towards a focal A-B relationship and anchoring the process in a relevant outcome whereby any horizontal (process) or vertical (state) perspective thereby obtained gains meaning and is recognisable as a necessarily embedded, delimited and temporal perspective.
Reality		Exists in the domain of Actual as a delimited process involving instantiated entities, mechanisms, events, and experiences that give rise to outcomes and states of affairs, whereby the domain of Possible (that which may exist) mediates the domain of Actual (that which exists), and the domain of Actual exists only partially recognisable and observable in the domain of Empirical (experiences) but is explainable through the domain of Real (theory). [Chapter 2, Section 3.2, Figure 15]

Attribute	Type	Definition
Connectivity	PROPERTIES	Inter-linked feedforward and feedback connections in the form of mental links between mental mechanisms, mind-body links between the field of mental mechanisms and the body, indirect physical links between overt behaviour and mental mechanisms, direct physical links between behaviour and with the physical world, and between humans and Nature at work, where the *primary* connection occurs between the behaviour of A and B forged within the mental processing of B where B's motives are causally influenced by A (B power-under) and vice versa (A power-to).
Reciprocity		A and B each exist at the epicentre of multiple relationships with other social agents wherein A and B stand as relative power holders (Actual-influence) and power subjects to the other (bi-directional) in power-to and power-over terms, negotiating not exercising either.
Asymmetry		Imbalances exist through one-way inducement of behaviour in a social agent, where there is not of necessity an equal and opposing behaviour, and through inequality in reciprocal power states (potential, actual, enacted) referred to as relative power states.
Dynamic		Process is an emergent and regressive, conditioned process characterised by constant change, activity, and progress towards obtaining outcomes that whilst through balancing operations may appear to obtain a level of stability (balance) from an adopted perspective, is nevertheless intrinsically transient and indeterminate.
Obscurity		Exhibits across the range of components varying degrees of the condition which does not allow it to be distinctly seen or easy to perceive or detect, most notably psychological forces embedded in the mental processes of individuals, especially component Motive, the most complex and compound psychological force, and component Actual-Influence, the most embedded state where accounting for time lags is important.
Operational Definition	OPERATIONALISATION	The perspective of IOR-power that is to be empirically determined fully specified in the process model to obtain relevance and meaning whether constituting an intensive perspective of a quality of power or an extensive perspective the process thereby accounting for components formally included or excluded.
Measures		Representation of the presence, size, amount, or degree of the specific perspective of IOR-power to be determined requires positioning along a perception-reality continuum for each component measure / dimension formalising the adopted perspective sought as being a perception of power (perception) or the phenomenon as it exists (reality) and from which standpoint, as an agent integral to the process (A or B) or a third-party observer.
Measurement		Acts of ascertaining measures qualitatively, or measures quantitatively using an instrument or device marked in standard units (measurement), also lie on a subjective-objective continuum based on methods adopted, recognising that to date there is no established standard unit of measurement or measurement device.
Interpretation		The nature of the empirical evidence of IOR-power (qualitative / quantitative) and the extent to which focal relationships and contexts (conditions) are accounted for, is central to establishing and communicating the meaning and significance of any empirical findings.
Generalisation		The extent to which empirical findings of IOR-power may be deemed to apply generally in the social world is subject to any assumptions made being justifiable and holding, where the distinction between empirical and theoretical generalisations is salient.

Table D-1. Attribute succinct definitions

D.2 Process model – Components

Component	Type	Individual Level Definition	IOR Level Definition
Organised RESOURCES	Transfactual Entity	A human individual (A or B) that is an indivisible, thinking being with an identity and goals, endowed with behavioural, social, political, economic, and physical resources providing capabilities and liabilities to behave and act as a semi-autonomous social agent.	Downwardly inclusive where resources extend to structures, systems, processes, and physical assets integral to sustaining an organisational form that may be physically separated, carrying distinct roles and purpose.
Goals	Transfactual Entities	A conscious, sub-conscious, or unconscious object of A / B's ambition or effort that is an aim or desired result or gratification sought fundamentally constructed by A / B or assigned and embraced.	Hierarchy of formal goals together constitute the overall purpose of an organisational form where goal consistency and coherence has increased relevancy.
ENVIRONMENT	Transfactual Entities	All other social and natural entities (not A or B) and relations between these entities, structured or otherwise, that directly or indirectly condition behaviour and outcomes of A or B and in turn are directly or indirectly conditioned by A / B.	Environment excludes all that constitutes the organisation form that correspondingly stands as an internal environment and legal contracts formally define relations.
Power EFFECTS	Event	Overt (directly observable) and covert (not directly observable) behaviours of A / B realised.	Downwardly inclusive collective overt behaviour where covert behaviour translates into collective norms, mental stances into shared views, but does not preclude contradictory behaviour at a given time.
Behaviour State	State	Behaviour A / B is engaging in independently or jointly and is occurring or not occurring at a given time (t6).	Collective behaviour states that may be physically separated and exhibit duplication, contradictions, or compound synergies.
Power OUTCOMES	Event Process Entity	An identifiable and significant consequence of discrete and collective A / B effects realised, intentional or otherwise.	Downwardly inclusive consequences of collective behaviour that are increasingly complex where discrete enabling outcomes are intelligible as power-points.
States of Affairs	State	The social and natural worlds as they exist as the result of all power outcomes where adopted perspective determines what aspect(s) of these worlds are held significant.	Perspectives of significance become increasingly difficult to circumscribe.
Value Resistance	Mechanism	Based on a theoretical maximum possible accorded general value to A, value resistance accounts for the difference in actual accorded general value by A / B.	Translates to a broader range of resources and formal evaluations.

Component	Type	Individual Level Definition	IOR Level Definition
Resources State	State	A / B are considered to evolve over time, therefore at any given time A identity and endowments exist as a resource state of a given general value to A / B.	Broader state of organised resources with formal role and purpose.
Power Sources	Mechanism	Anything constituting A accorded value, positive or negative, in general by A or B, is thereby a power source or sink respectively and potentially relevant to goal attainment A / B.	Translates to a broader range of resources and goals in formal evaluations.
Importance	Mechanism	The specific relevance of A's specific power sources to goal attainment for A / B, thereby A's specific value to A / B.	Translates to a broader range of power sources in formal evaluations.
Intrinsic Resistance	Mechanism	A's loss in specific value of power sources given level of reliance on A's power source for goal attainment A / B that may vary for A / B not least given goals vary across individuals.	Translates to a broader range of power sources and formal evaluations.
Dependence State	State	A relational state of functional reliance of A / B on A's specific power sources for goal attainment (A independence / B dependence), lying on a constrained-elected continuum given by nil or full access respectively to alternative power sources for goal attainment.	Broader states of independence and dependence that in formal evaluations underpins the basis and importance of the IOR.
Potential influence	Mechanism	A potential mental capacity of A to induce A's specific behaviour (power-to) or *in part* assigned to A by B (power-under) inducing B's specific behaviour.	Translates to potential collective abilities.
Behavioural Resistance	Mechanism	A type of psychological force that acts as a mental resistance A / B (positive, negative, or neutral) to perform specific A / B behaviour based on relevance to attainment of all goals.	Translates to a broader range of goals and formal evaluations.
Environment *(Environmental Influence)*	Mechanism	A relational state of functional reliance of A / B on specific power sources of all other social and natural agents for goal attainment (dependence relations), lying also on a constrained-elected continuum that conditions A's Potential-influence becoming Actual-influence.	Translates to external environment including formal legal, social, and environmental responsibilities.
Black Box	Event	Sense-making and reasoning processes in situated evaluations that are the central and core behaviours that A / B engage in to varying degrees subject to mental powers, context, and preferences.	Translates to formal situated evaluations including negotiations and decision-making processes.

Component	Type	Individual Level Definition	IOR Level Definition
Means	Event	A's power effects (behaviours) that *serve* to directly bring about or give rise to (induce) subsequent behaviour (overt or covert) of A (self) or B (other).	Downwardly inclusive collective overt behaviour serving to induce behaviour including formal contractual demands.
Motive	Mechanism	Formed by cognitive sense-making and reasoning processes, governs formation of A's Actual-influence attributed by A / B and if and when A's Actual-influence is activated to generate A / B Enacted-influence.	Translates to formal situated evaluations including establishing collective strategies, tactics.
Actual influence	Mechanism	A mental capacity of A to induce A's specific behaviour (power-to) at A's will (efficient A Motive) or *in part* assigned to A by B (power-under) to induce B's specific behaviour, at B's will (efficient B Motive).	Translates to actual collective abilities.
Potential Influence States	State	Potential-influence and Actual-influence as central types of compound mechanisms exist in a state of *potentiality* in the domain of Actual as latent abilities or *potential* energy when they come into being as distinct from being in the domain of Possible.	Potentiality of collective latent abilities or potential energy.
Enacted influence	Mechanism	Activated Actual-influence mentally forming A's specific behaviour (power-to), or *in part* assigned A (reciprocal) and/or the environment (environmental) forming B's specific behaviour (power-under).	Translates to forming collective behaviour.
Influenced State	State	Enacted-influence as central type of transfactual mechanism exists in the domain of Actual as distinct from being in the domain of Possible as a state *when* it come into being as active or kinetic energy forming behaviour at a given time *(punctual)* or over a given time *(continuous)*.	Translates to collective states of punctual and ongoing behaviour.
Feedback / Feed-forward	Causal Relations	All components are inter-connected whereby a change in one component may result in a change in one or more of the remaining components either as feedforward (Behavioural Resistance to Motives) feedback (Outcomes to Organised Resources) or as an inter-play (Motive forming Goals; Goals forming Motive)	Translates to collective components but where interference between the inherent range of embedded replicated processes adds complexity including *specific features* such as formal vertical escalation processes and the possibility of contradictory behaviour at a given time.
Power Efficiency	Descriptive	A measure of efficiency is the level of A's behaviour and influence required to obtain B's behaviour given by the product of influence efficiency (force ratio) and behaviour efficiency (movement ratio) $$P\eta = (F2 / F1) \times (B2 / B1)$$	Translates to collective measures for explanatory purposes related to levels of consumption of resources and time-taken to obtain outcomes including discrete measures such as production downtime rates and lead-times.

Component	Type	Individual Level Definition	IOR Level Definition
Power Effectiveness	Descriptive	Outcome effectiveness is the percentage difference between A's goals (Ga) and outcomes obtained attributable to A (Oa). $P_e = (Oa - Ga) / Oa$ Influence effectiveness is the ratio of desired induced behaviour (B3) and induced behaviour obtained attributable to A (B2) $P_e = B3 / B2$	Translates to collective measures for explanatory purposes related to formal goal attainment levels including discrete aspects such as customer survey satisfaction levels and adherence to management general requests or instructions.

Aristotelian 4 Causes	Mechanism *(qualifier)*	Four causes posited by Aristotle [384 B.C. to 322 B.C.] in his general theory of causality as conditions of proper knowledge about something that distinguish power from influence:
		  Material Cause is "that out of which" or **resources**
		  Final Cause is "the sake for which" or **ends**
		  Formal Cause is the "nature of the transformation" or **means**
		  Efficient Cause is the "primary source of change" or **energy force**
			Translates to collective components but are more complex in nature.

Bottom-UP And Top-DOWN Causality	Mechanism	Two types of causality recognised in complexity science capturing the multi-levelled nature of phenomenon employed to emphasise the ongoing interaction between A/B bottom-up agency and top-down structure on A's power-to and power-over B.	Translates to collective components but are more complex in nature.
Empowerment	Descriptive	A's Potential-influence to take action is given or bestowed as authority or enabled including resources, rendering A empowered or conversely A's Potential-influence to take action is constrained by withdrawal of authority or enablers including resources, rendering A disempowered.	Translates to collective components and is rendered explicit in formal hierarchical structures as role delegated authority and allocated resources.
Process	Descriptive	States accorded with a time state number *(t0 – t7)* and weighted arrow signifies primarily states emerge, but also may regress over-time.	Translates to collective components but more complex in nature.

Table D-2. Process component succinct definitions

D.3 Core components detailed explanation

D.3.1 Goals

Core Definition: A conscious, sub-conscious, or unconscious object of a person's ambition or effort that is an aim or desired result or gratification sought.

First, goals are considered fundamentally constructed by people and stand as leading the process given goals condition behaviour *towards* their attainment as desired outcomes whether realised or not. A goal recognised or constructed by an individual may become shared and thereby a shared goal of a group or an organisation. Conversely, goals can be bestowed upon an individual or specified by an organisation or a group. Where goals are individually formed, shared or otherwise, they are deemed personal or *informal* goals. Where goals are specified or formed by social entities (groups or organisations) they are deemed *formal* goals and a distinct object of collective purpose. As such formal goals are conceived as a type of *social* entity. Where, an individual *is* committed or desires to obtain an informal goal, this is not necessarily the case for a formal goal. Only where a formal goal is *embraced* or internalised as a personal goal can it infer an individual member of a group or organisation is *committed* or desires to obtain the formal goal. Nothing precludes a formal goal generating opposing informal or formal goals.

Second, there exist an abundance of identifiable informal and formal goals ranging from self-esteem through to organisation profitability. At what level of consciousness *all* such goals reside is outside the scope of the theory, and undoubtedly different across individuals. Moreover, the theory recognises goals may be obscured, dormant, or inactive. Goals may also be interdependent co-operatively (mutual) or competitively (conflict) for an individual, between individuals or between groups or between individuals and organisations, and so forth. Goals may carry varying degrees of importance, are not necessarily attainable, and may require assistance of others or conversely freedom from others to attain. Albeit intrinsic to behaviour and outcomes, goals are thus highly complex essentially (content) and structurally (inter-relations), and thereby in

causal effect. It is the relevance yet complexity of goals in leading the process, that is pertinent to the theory.

Third, and central to the explanatory theory is that resources beyond behaviour are required for attainment of IOR goals, not least financial and productive resources (equipment, materials). There are also resources that are essential to goal attainment. The importance of a goal, that is goal desirability *leads* forming first the *general* importance or *value* of resources for goal attainment (power sources). Thereafter, the importance of *specific* resources within a focal A-B relationship forming *specific* resource dependences is subject to the source agent or entity and *availability* of the specific resources generally. That is, resource dependences within a focal A-B relationship are as a minimum tri-dimensional (self, other, others). The source agent can be the self (A) as *internal*, the other (B) as *reciprocal*, or others (C) outside the focal relationship as *environmental*, or some combination. The nature of each dimension of dependence (A, B, C) may be either *fully constrained* given no alternative availability / accessibility to the resources or *fully elected,* that is reliance based with full and free access to all alternative equivalent resources necessary, or *partially* constrained / elected where alternatives are less favourable, limited, or accessible. This is referred to as the constrained-elected dependence *continuum*.

Thus, goal attainment for A, is conditioned by A's actual level of *in*dependence (self), actual level of dependence on B (the other), and actual level of dependence on C (all others) each lying somewhere on the constrained-elected continuum, in relation to each other. The same is also the case for B. This can generate highly complex dependence relations for the attainment of a goal in an A-B relationship, especially where multiple resources are necessary from different source agents. For multiple goals it is held far too complex to be fully understood, only explained in principle. Further inter-relations emerge not least through resources being common across multiple goals. It is the relevance to goal attainment yet complexity of dependence relations, that is further pertinent to the theory.

Lastly, given the distinction drawn between market / quasi-market / durable arm-length relationships and partnerships (Chapter 2, Section 2.3.2.1), a distinction

between dependence relations versus relationships is important carrying different risk management implications (Chapter 2, Sections 2.3.2.2). Dependence on resources that are transitory or unsecured corresponding to a quasi-market relationship, are dependence *relations*. Dependence on resources that are committed and secured to some *extent* corresponding to a partnership, or the self (internal), are dependence *relationships*. A secured-unsecured dependence *continuum* thereby is anchored at, internal (secured) through partnerships (variably secured) to market based (unsecured).

In conclusion, to advance theory validity is a *testable* empirical proposition P4,

P4:   Goals guide rather than control behaviour and outcomes.

D.3.2 Power effects

Core Definition: The overt and covert behaviours of individuals attributed wholly or in part to focal organisations, severally or jointly.

First, within the overall power process, power effects are *the* discrete behaviours of an individual that are the *product* of influence and the *formal cause* of outcomes. It is behaviour that *transforms* states of affairs, whether such transformations are observable or not. Discrete behaviours may be overt or covert and may occur independently or simultaneously forming a compound behaviour (overt and overt; covert and overt; covert and covert). Induced behaviour alone may constitute a significant outcome (behaviour outcome) and/or contribute *directly* to other outcomes. All power effects thereafter, in some form, feed-back into the ongoing power process, not least as the historical basis on which future behaviours stand.

Power effects that are *overt* such as communicating a decision or engaging in an activity, are inherently more observable and identifiable than *covert* power effects. Power effects that are *covert* such as attitudes, beliefs, perceptions, confidence, and decisions made, are not directly observable and thereby less identifiable. They are nonetheless highly relevant in conditioning overt behaviours of relevance to outcomes, including the absence of overt behaviours (in-action). It is the significance, yet non-observable nature of covert behaviour, that renders obscurity an important quality of power. It is the significance of in-action in altering the course of events and outcomes that renders power essentially dialectical (absences and oppositions).

Second, through feed-back, covert power effects (mental stances) become integral to an individual's consciousness at some level (conscious, sub-conscious, unconscious) and thereby cognitive processing namely sense-making and reasoning that form motives governing *future* behaviour. They are nevertheless distinguished from *transitory* mental stances or positions established *during* cognitive processing that become superseded by the behaviour they contribute to forming. Assessing the implications of a decision

during decision-making is a form of transitory mental stance that once the decision is formed becomes superseded by the decision made albeit possibly retained in memory in the same manner behaviour may be stored in memory, contributing to further reasoning processes. This distinction provides theoretical clarity, in recognising all such temporary covert stances are *embedded* in cognitive processing rather than products of cognitive processing (power effects). The very *ability* to engage in cognitive sense-making and reasoning that contains such transitory stances and memories, *is* the central covert behaviour or engine *of* power, corresponding with the significance of possessing *mental powers*.

Third, power effects are behaviours *realised* that from a *conscious* perspective may not be wholly intentional, even unintentional in form and/or consequence. This is simply explained to occur where a motive is formed based on a capability not present. It may also occur where several discrete motives are in play at the same time, possible at different levels of consciousness, causing interference if not *conscious* confusion in motives, and thereafter in the behaviour induced. If power effects are not held to be anchored in a *primary conscious* motive, deviant behaviour is not identifiable and *all* behaviour may or may not be deviant, rendering the notion or concept somewhat redundant. Identifying a primary motive(s) is thus important to explaining power effects.

That the consequences of behaviour may not be wholly intentional from a *conscious* perspective is similarly given by such consequences not corresponding with the primary conscious motive, viewed through a power lens (outcomes) rather than an influence lens (effects). This is not necessarily deviant behaviour rather may be an error in judgement as to the contribution the behaviour holds to outcomes. Correspondingly, this does not preclude outcomes realised being in accordance with motive where there is deviant behaviour given such errors in judgement may equally serve to render the consequences of deviant behaviour, effective.

Following on from deviant behaviour is that discrete behaviour whilst induced, does not occur in a vacuum rather within a social and natural environment and is thereby *directly* constrained or enabled by this environment and subject to any

behaviour occurring in the environment. Behaviour realised may thus be further different to the behaviour induced due to the environment directly intervening with the induced behaviour, as a causal force *physically* changing in some way the behaviour. For example. during the act of placing a concrete slab on another concrete slab during construction of a building, not least a sudden gust of wind or a nudge by another person may cause the concrete slab to be inadvertently positioned differently. Conversely, discrete behaviours act directly on the environment constantly changing the environment.

Fourth, discrete behaviours may be *punctual* occurring at a specific moment in time such as a speech act, or, *enduring* through time such as engaging in an action of planning, or, *repetitive* over time where punctual and enduring behaviours may be repeated, at different moments in time. The latter case of repetitive behaviour exposes one dimension of downwardly inclusive behaviour where successive behaviours contribute to forming an *ongoing* behaviour of relevance. Further instances of downwardly inclusive behaviour are multiple discrete behaviours of several individuals combining to form *collective* behaviour. Although behaviour is ultimately *self*-induced by an individual, B, it may be so highly influenced by another, A, that the induced behaviour would not have occurred but for the influence of A, and may be largely *attributable* to A, termed *power-over*. Power-over is thus not constrained by space. It *is* fundamentally *action-at-a-distance* to the extent that A need not even be in the physical presence of B, for inducement to be attributable A, nor is it constrained by time.

Lastly, individuals do not exclusively occupy roles in an organisation, that is engage in a *work* life. Individuals occupy roles outside organisations not least, within friendship groups, families, religious communities and so forth that can be referred to as the *personal* life of an individual. An individual is nevertheless an individual and whilst to some extent there is a separation between work and personal lives, both are inextricably linked mentally and physically. As such, individual behaviours associated with the performance of an organisation role may not be fully explained by the organisation context. It is the *whole life* context of the individual concerned that bears relevance to individual behaviour albeit

shaped by the immediate matter at hand be that a work or a personal matter. The explanatory theory recognises this fact in *not* de-limiting goals or behaviours that might be reasonably attributable to an organisation or an IOR, such as an individual displaying depression at home. The converse being also the case, it may be that behaviours are more reasonably attributed to an individual or the environment than an organisation or an IOR.

D.3.3 Power outcomes

Core Definition: An identifiable and significant consequence of behaviour attributed wholly or in part to the focal organisations, severally or jointly.

First, power outcomes like power effects (behaviours) are highly varied in content and complexity, rendering some outcomes more identifiable than others. Outcomes that are identifiable possess a level of concreteness rendering them manifestly significant in some manner however not all outcomes may be recognisable but significant, nonetheless. Significant outcomes in the IOR context are identifiable by formal goals that define the object of each organisation's ambition or effort, the aim or desired result, that may be shared. Such goals include desired profit levels, cashflow levels, market share, new product developments, and customer satisfaction levels.

Outcomes however extend beyond formal goals given formal goals do not necessarily capture *all* the consequences of organisation behaviour, merely those recognised and formalised as desirable. Although increasingly *sustainability* of the environment in broader terms (economic, social) is on the agenda of organisations, this does not infer that all aspects of sustainability are fully attended to through formal goals. Neither do formal goals necessarily capture the significance of informal goals. Goals also guide but do not control outcomes (P1). An explanation of IOR-power that attends to outcomes solely in relation to formal goals is held an incomplete explanation of IOR-power.

Third, outcomes including the production of physical things (aircraft, buildings etc.) renders not only human abilities to perform physical acts but the physical resources employed during production including man made machines and technology significant to power in this context. Not only are the *mental powers* of individuals integral to explaining *power* but equally the *physical powers* of individuals and machines, and the *information processing powers* of technology.

It is the scope and scale of IOR-power that the metaphorical notion of power-points emerges, inspired by Case Y (confirmatory study). As goal structures and individual behaviours are downwardly inclusive in form, power-points captures

the realisation of discrete outcomes that combine to *serve* obtaining more significant outcomes. These are equally downwardly inclusive that through feed-back stand as the basis on which future outcomes are realised. As behaviours differ in nature (punctual, enduring, or ongoing), outcomes differ in *nature* not least as events, processes, or material entities that may be final or enduring, occurring or becoming, at different points in time (short, near, long term). The *significance* of the outcome may also endure for different periods of time in *effect* (short, near, long term) shaping future behaviours and outcomes until becoming obsolete or superseded by outcomes although retaining historical relevance.

Capturing the nature and full significance of an outcome is a question of *perspective,* as is attributing responsibility. Defining an outcome of interest is therefore an important anchor in accounts of IOR-power.

In conclusion, to advance theory validity is a testable empirical proposition P1,

P1: Outcomes of relevance extend beyond human behaviour and includes the consequences of behaviour that may use or consume resources.

D.3.4 Environment

Core Definition: All other (not A or B) social and natural entities and relations between these entities, structured or otherwise, that directly or indirectly condition behaviour and outcomes of A and B, and in turn may be conditioned by A and B behaviour and outcomes.

First, recognised are how A-B individual relationships are invariably embedded in a social and natural environment both internal and external to the IOR of interest, collectively the environment. Not only may this environment *intervene* directly with discrete behaviours and vice versa (Appendix D.3.2) but equally outcomes may be *directly* enabled or constrained by the environment, and outcomes alter the environment. Thereby, as in the case of behaviours, full and absolute attribution of outcomes to an organisation may not be readily discernible or be the case and requires due consideration. Although certain *benefits* appropriated by an organisation, such as profits may be clear, these nevertheless remain dependent on the environment for their realisation. That outcomes are inextricably contingent on not only the social environment but the natural environment, renders all types of *natural power* integral to *power* in this context (IOR-power) that *is* thereby social and natural in form.

Second, where the process model as the basic building block is aligned to the A-B relationship exposing A's organised resources and A's Potential-influence derived from these resources, in practical terms, this is replicated for *all* other entities residing in the environment. The environment consists of a range of organised resources that generate environmental influences (indirect) carrying the same basic significance as A's Potential-influence.

In conclusion, to advance theory validity is a testable empirical proposition P3:

P3: Environments of IORs includes material forces at work namely, Nature, human physical acts, and human creations, that are directly and indirectly relevant to IOR-behaviour and outcomes.

D.3.5 Organised resources

Core Definition: All resources (things that can be used for practical purposes) including behavioural, social, political, and economic that a human based entity (individual, group, organisation) is endowed with, constituting what the entity *is*.

First, organised resources delimit the resources held attributed to the relevant focal entities (A and B) in an A-B relation*ship* that is *human based* but not limited to humans and includes structures, systems, or processes that are an integral part of the entity. Resources not attributed to either human based entity (A or B) severely or jointly as organised resources within a focal relationship, by default, are obscured or held to reside in some form in the environment in which the relationship as noted is held naturally embedded.

Second, attribution of organised resources to A and/or B significantly alters accounts of the power relation between A and B. It is the relevance of these resources to goal attainment that is significant to explaining and attributing IOR-power. Fundamentally, what is or is not attributed to A and/or B, is practically given by the agents A and B, always recognising that it is the perspective adopted and perception held by A and B that determines the behaviour of each.

D.3.6 Means

Core Definition: Power effects (behaviours) that *serve* to directly induce (bring about or give rise to) subsequent behaviour (overt or covert) of the self or another.

First, all behaviour serving as means in a focal relationship are themselves foremost a power effect, a behaviour generated by a prior discrete influence process. Means do not merely appear as do not behaviours rather emerge from *a* process of influence however simple or complex. Clarity provided on behaviour in Appendix D.3.2 thus applies to means. The generation of means captures one of several significant feed-back/feed-forward relations in the continuous process of influence. Means are a sub-set of power effects carrying the specific quality of *direct inducement* of subsequent behaviour of the other (B) or the self (A), not overlooking that A may seek to induce A's own behaviour as in a self-motivating act. Whether the inducement is successful or not, immediate or delayed, a distinct and direct causal influence *connection* is identifiable between *the* inducing behaviour (A means) and the *inducing* of Actual-influence (Enacted-influence) to form a behaviour (B effects; A effects).

Second, that a direct causal influence connection exists inducing behaviour (A means) is given in the first instance by the motive of the individual A, engaging purposefully in inducing A's or B's behaviour; that this *is* the intended purpose of A's behaviour. The inducing behaviour of A may be a request, demand, command, or form of gesture intended to induce a behaviour response (overt or covert) to directly change the foreseeable course of events. Where A is successful, the inducing behaviour effectively generates a *corresponding* A or B motive triggering Enacted-influence to generate a behaviour response in accordance with the demand. That the motive and Enacted-influence triggered may not be what was sought or that the means adopted by A may have no impact may nevertheless be the case.

There are many permutations to how the behaviour of A and B may be connected. Foremost, A may be seeking to induce behaviour of B (other) and B may or may not be aware of the inducement. A may behave in some manner not intending to

induce B's behaviour but A's behaviour is *perceived* to be an inducement by B to behave in a specified way, successful of not. A's behaviour *is* intended to induce behaviour and *is* perceived as an intended inducing behaviour by B and *serves* to induce a behaviour by B that otherwise would not have occurred. Inducing behaviour (A means) may also be accompanied or re-enforced by *direct* physical behaviour, that is, a separate discrete behaviour with a direct *physical causal* connection (hand-shake) carrying significance to *non-direct* physical behaviour (verbal), rendering the latter an inducing behaviour. The afore cases capture the basic principle of a *direct* causal influence connection and is one reason connectivity is an important quality of power, where the significance of means when passive (no A motive) is not marginalised, but that means are not necessary for behaviour to arise rather it is simply self-induced (self-motivated).

Third, direct causal influence between behaviours contrasts with the altering of Actual-influence that occurs *indirectly* where an inducing behaviour alters some element of the power process, from organised resources through to goals and outcomes, that has bearing on an individual's ability to behave in a certain a way. In this case, the inducing behaviour does not serve as means, more captures the continuous feed-back/forward relation between power effects and Actual-influence. An example of indirect inducement is where A's performed behaviour demonstrates a behaviour trait previously not known (obscured) altering perceptions of A's behaviours generally (organised resources) thereafter judgements as to the value and importance of A, A's Potential-influence, ultimately altering A's Actual-influence, either from A's perspective (power-to) or B's perspective (power-over). Altering of Actual-influence is not necessarily known to A, or B (mirror process).

Fourth, both direct and indirect *inducing* behaviour are distinct from behaviour (power effect) that has no material impact on an individual's ability to behave or behaviour (in progress). In principle, the distinguishing feature is that inducing behaviour bears *significance* in directly or indirectly changing the status quo or course of events for an individual. By default, all other behaviour effects maintain the status quo or course of events. This does not infer that behaviour such as a

recognised practice performed in the expected manner cannot serve to induce behaviour change. On the contrary, a practice may at some point become an inducement to change the practice for several reasons, not least if it became ineffective (goals), annoying, even tiresome (behavioural resistance).

Fifth, although means is assigned to agent A or agent B in the mirror process, this does not preclude recognising inducing acts emerging from the environment simultaneously, possibly instigated by A as an *indirect* means of placing demands on B. To establish a clear separation between the significance of the environment in relation to a focal A-B relationship, all such requests, demands, commands, or gestures are theoretically captured through environmental influences in addition to and interrelated with dependence-based influences, but remaining distinct from direct environment causal powers.

Lastly, causal *influence* connections however may not be readily discernible and may not be recognised to be the case because all instances require accessing the sense-making and reasoning processes (black box) of either A or B or both, that are not directly observable. For example, inducing behaviour and physical behaviour may occur simultaneously or in any sequence where the combined relevance is not self-evident. The perspective adopted (relevant behaviours; time) may therefore alter what is and what is not recognisable as an inducing behaviour. Whether there is a discernible means (inducing behaviour) and whether there is a discernible intent (motive) accompanying means might only be reasonably inferable, implicated, assumed, or claimed.

In conclusion, to advance theory validity is a testable empirical proposition P8:

P8: Means as intentional and unintentional inducing acts are significant in governing behaviour but not always necessary.

D.3.7 Enacted-influence

Core Definition: A central type of psychological force that is activated Actual-influence and has the mental effect of forming and inducing a specific behaviour of an individual (power effect), where in an A-B relationship the ability to activate this psychological force is assigned to the individual (self) or in part the other (A or B) or more broadly the environment.

Foremost, Enacted-influence occurs in the mind of the individual whose behaviour is thereby formed and is that which *transforms* behaviour. Although in common use of the English language, Enacted-influence is typically attributed to the factors or individuals that are the sources of Enacted-influence, as in an individual A *influences* another individual B. More accurately and precisely, an individual B, *is under* the influence of A, and influenced *by* A. Enacted-influence is the cognitive output of the black box of sense-making and reasoning processes that are the central and core behaviours that individuals engage in to varying degrees subject to mental powers, context, and preferences.

Second, as a psychological force held to explain the forming of behaviour, it is not directly observable rather theorised to exist in some form as the mechanism that generates or produces behaviour (generative mechanism), making the behaviour what it *is*, serving as the *formal cause* of influence, where the behaviour induced is the *final cause* of influence. It may not be readily discernible by the conscious intentions of individuals given deviant behaviour. It may also not correspond with a behaviour realised given possible interference from the environment. It nevertheless carries explanatory significance in drawing the distinction between all that contributes to inducing behaviour (Potential-influences; means; motives) and that which ultimately forms and induces a discrete behaviour (Enacted-influence).

Third, corresponding with the black box (Chapter 4, Section 4.2.2.10 and 4.3.2.3), Enacted-influence is conceived as layered in that there are *three* identifiable levels of influence forming three distinguishable levels of behaviour. The most fundamental level concerns the very forming of *basic* perceptions of reality. It is

integral to the cognitive process of *sense-making*, an idiosyncratic process whereby through not least the five human senses (sight, sound, taste, smell, and touch) individuals interpret and understand the world around including themselves, forming some basic understanding of entities (organised resources) and events (behaviours and outcomes) including emotions (internal sensations). Basic perceptions are susceptible to constant change through new encounters with this reality, directly and indirectly.

The next level is whereby through increasingly higher level and compound *reasoning* processes, mental stances are formed from basic perceptions. Stances include opinions, preferences, goals, judgements on what is and what is not valuable for goal attainment (power sources), through to senses of confidence and trust in the self and others including beliefs. Stances may vary in stability or strength such as, a shifting opinion on the performance of a minor project over the project term versus religious beliefs that may be so strong and enduring to serve as life goals, a desire to always live by such beliefs. Once formed the collection of all such stances is readily thought of as a *fluid mental framework* that underpins not only future sense-making and reasoning processes, but also the next level of reasoning processes.

Where the first two layers capture Enacted-influence that forms covert behaviour from perceptions to goals, the third layer is whereby Enacted-influence generates behaviours in *pursuit* of goal attainment that can be covert such as judging when not to offer advice and maintain counsel (abstention) and overt such as engaging in project planning, and which may become practices. Where the first two layers capture individuals making sense of the world, the third layer captures individuals as agents, both acting and abstaining from action in the world of which they are a part. It is the third layer of enactment that attracts greatest attention in IOR-power analysis and discourse.

The layers are theoretically discrete layers however conceived as interrelated, constantly interacting through process feedback/feed-forward relations, whereby perceptions, stances, and behaviours emerge through time, each conditioning the other. Whilst A and B may seek to exercise influence over the self (self-

control), each other, and others, any such influence remains subject to the cognitive processing of all individuals concerned. The forming of behaviour at all cognitive levels is a process of *enactment*, a continuous interplay between A and B, each *negotiating* a way forward in the surrounding environment.

In conclusion, to advance theory validity is a testable empirical proposition P2,

P2: Enacted-influence directly induces behaviour, including abstention, that forms outcomes.

D.3.8 Power sources

Core Definition: Power sources are individual or combined resources attributed to *any* entity that are valued positively or of utility in attainment of goals.

Core Definition: Power sinks are individual or combined resources attributed to *any* entity that are valued negatively or a hindrance to attainment of goals.

First, power sources accord with the entity to which the respective valued resources are attributed. Notwithstanding, what stands as a power source is determined by the human based entity evaluating the resource, that can be the entity to which the resource is attributed, A or B, or the other (A or B respectively) or both (shared), in the focal A-B relationship. Power sinks are similarly assigned. Resources may also be attributed no general utility, merely recognised as an attribute of an entity.

Second, as noted in Appendix D.3.1 it is the specific value of the power sources based on importance to goal attainment that renders sources central to explaining behaviour and outcomes. Sources held important to goal attainment generates a state of dependence on the sources. In the optimised process (Chapter 4, Section 4.3.2, Figure 23), agent A is to an extent dependent on agent A's sources (self), and agent B is also dependent to an extent on agent A's sources. The reverse being the case in the mirror process.

Importantly, dependence carries significance in four distinct ways in the power-*over* process. Where for A, dependence relates to exploitation of B's dependence for A's goal attainment, for B, dependence relates to *access* (need or enabler), *avoidance* (harm or constraint), or *obligation* (commitment or right) in relation to A's sources, for B's goal attainment. This translates to the most utilised framework capturing dependence as sources (French and Raven, 1959) summarised in Table D-3. Contrary however to standard interpretation of expert, legitimate, and referent sources as being non-mediated by A, there is nothing to preclude A seeking to generate and exploit these sources, through promoting and nurturing, or withholding, just as A might seek to generate the ability to threaten punishment or promise rewards, and thereafter exploit.

	A Power Source	Significance A	Significance B
Coercion	Ability to punish and likelihood (harm)	Exploit	Avoid
Reward	Ability to reward and likelihood (benefit)	Exploit	Access
Expert	Ability to credibly inform / advise (expertise)	Exploit	Access
Legitimate	Ability to obligate behaviour (rights)	Exploit	Obligation
Referent	Ability to attract behaviour (identity)	Exploit	Access

Table D-3. Significance of sources as dependence states

Third, there are several permutations as to how these sources may combine to either re-enforce and strengthen or diminish and weaken sources. For example, an ability to punish (coercive) may be re-enforced by legitimacy (legitimate) as might the ability to reward (reward) be diminished by legitimacy. Equally, there are other strong connections or overlaps between sources, for example, the ability to provide credible advice (expert) can be a reward (reward), and rights as authority serving to obligate behaviour (legitimate) can be an attraction and a source of identification sought (referent). Rights as authority (legitimate) can equally be considered unattractive and thereby a power sink (referent) exemplifying how an attributed resource can serve either as a power source or sink, subject to B's goals and B's evaluation system.

Fourth, perspective adopted thus may alter classification to the extent that what may be considered harm (coercive) by A may be viewed as a benefit (reward) by B and vice versa. Obscurity, mis-interpretation, and fundamentally different evaluation systems explains how power sources may be viewed differently. Ultimately, the explanation of how these sources or any others contribute to B's state of dependence, is given by B's evaluation processes, erroneous or not. Similarly, it is A's evaluation processes in the power-over process that establishes A's perception of B's dependence and A's ability to exploit, and for A in A's power-to process in determining A's state of self-dependence.

Lastly, and more evident in the revised process model is how it is the state of dependence of B on A, and independence of A, that respectively constitutes A's Potential-influence in A's power-over B, and A's power-to.

D.3.9 Potential-influence

Core Definition: A central type of psychological force that when active has the mental effect of potentially motivating or inducing behaviour of an individual where in an A-B relationship, the ability to generate this psychological force is assigned to the individual (self) or in part the other (A or B) or more broadly the environment.

First, being integral to an *influence* process, Potential-influence *exists* in the mental processes of the individual whose behaviour is thereby *potentially* induced. Aligned to an A-B relationship, the ability to generate this potential inducement (causal force) is *assigned* primarily to the individual being induced, A or B (internal), and may in part be assigned to the other A (A reciprocal) or B (B reciprocal), and possibly to the environment (environmental). It is formally captured as a *potential ability* to induce behaviour, as opposed to an *ability* that *necessarily* can be exercised or take effect at will (*Actual-influence*). Potential-influence is equivalent to dependence (Chapter 4, Section 4.3.2, Figure 23) and carries the same significance as depicted in Table D-3 but more clearly implicates the significance of dependence in driving behaviour and behavioural change, in standing as an ability state.

In the A-B relationship optimised process (Chapter 4, Section 4.3.2, Figure 23) for explanatory purposes, Potential-influence is fully assigned to A, to simply capture the A power-to, and A power-over B processes, simultaneously. In the A power-to process, A, in pursuit of A's goals availed with A's power sources of utility to A's goals, is effectively primed to engage in behaviour that uses these power sources to obtain A's goals. Such behaviour (power effects) may serve to directly contribute to obtaining goals, or it may serve as means to induce B to engage in behaviour to support A's goal attainment. That is, in the power-over process A is also primed to draw on A's Potential-influence attributed *by* B, to induce B to behave as desired (A means) in accordance with Table D-3, from avoiding harm (coercion) through to re-enforcing or increasing identification with A (referent).

Second, aligning with the nature of dependences being many and varied, a range of Potential-influences may exist that individually or in combination have different relevance to obtaining different goals. Where it is necessary to anchor an account of power in an outcome of interest (Appendix D.3.3), correspondingly an account of Potential-influence is foremost anchored in a *focal* goal. The rationale for this is rendered clear in explaining the significance of behavioural resistance (Appendix D.3.10). This does not preclude Potential-influence being relevant to several or all goals, such as financial performance goals, rather that Potential-influence constitutes *relevant* Potential-influence in explaining power in bearing significance to attainment of the *focal* goal. For example, expert knowledge on building partnership relationships does not directly concern how to build infrastructure and therefore would typically only carry significance in forming motives concerning building partnerships, not infrastructure.

Third, subject to where a specific Potential-influence lies on a constrained-elected continuum (D.3.1) adds relevancy, although the significance is not to be confused directly with a consensus-coercive continuum (Appendix D.3.11) capturing the degree to which a potential inducement may be obtained willingly or under some duress. That is, highly constrained Potential-influence may induce highly consensual behaviour given focal goal alignment, all other things being *equal*, and conversely highly elected Potential-influence may contribute to inducing coerced behaviour given focal goal conflict, all other things being *unequal*. It is alignment of Potential-influence to a focal goal and the significance of behavioural resistance (Appendix D.3.10) that supports the distinction between the continuums.

Fourth, corresponding with dependence, where a specific Potential-influence does lie on a secured-unsecured continuum (Appendix D.3.1) also explains why A or B respectively might be self-motivated to seek and secure power sources or avoid power sinks to augment Potential-influence that is the potential ability to obtain goals. Attribution of resources is thus important not only for distinguishing between dependent and independent power (Chapter 4, Section 4.3.1), rather is more fundamentally material to behaviour.

Lastly, environmental influence carries the same basic significance as A's Potential-influence but relates to all relations not merely relation*ships*, A and B hold with all other entities, social and natural (Appendix D.3.4). That the mirror process, B's power-to and B's power-over A, is held to reside in situ further increases the range and complexity of Potential-influences of significance to a focal goal. As noted in Chapter 4, Sections 4.2.2.7 and 4.2.2.8, agents A and B each engage in a situated evaluation of Potential-influences (internal, reciprocal, environmental) in-play at a given time. In an account of power anchored in a focal goal this translates to evaluations of *relevant* internal, reciprocal, and environment Potential-influences.

It is the extent and range of Potential-influences that may be assigned to an entity (A or B) at any one time related to multiple goals, subject to the weight of environmental Potential-influence that renders any Potential-influence assigned only ever a *potential* ability to induce behaviour, and not an ability that can be exploited *at will*. More fundamental is how the very constitution of organised resources, power sources (sinks), and thereby Potential-influence is generated through an embedded *covert* influence process, that of *continuous* sense-making and reasoning by individuals involving judgements. Potential-influences formed, are subject to change and therefore not necessarily stable.

D.3.10 Behavioural resistance

Core Definition: A type of psychological force that acts as a mental resistance (positive, negative, or neutral) to perform specific behaviour based on relevance to attainment of all goals.

First, behaviour*al* resistance is a distinct type of psychological force conditioning Potential-influence in *forming* a motive. Where Potential-influence captures the relevance of a broad range of valued organised resources (self or other) that may be drawn upon on for attainment of a *focal* goal moreover *driving* a specific behaviour, behavioural resistance counter-balances all *relevant* Potential-influences including environmental influence with the significance of the specific behaviour in respect of *all* goals. As such, where Potential-influence is either a positive or negative driving force (not neutral) towards a specific behaviour (including abstention) in pursuit of goal attainment, behavioural resistance may be positive, negative but also neutral, subject to whether the specific behaviour in question *would serve* to support, oppose, or have no bearing on attainment of all other goals. Recognising positive behavioural resistance importantly draws attention to the possibility of a perceived inability or ignorance, rather than unwillingness to perform a specific behaviour.

The rationale for attributing the requisite broader goal perspective to behavioural resistance rather than Potential-influence follows the rationale for *power-over* being integral to *power-to.* It is first consistent with recognising power primarily as a force of change. Foremost is the process leading to behaviour change (Potential-influence) rather than the process potentially inhibiting behaviour change (behavioural resistance). Thereafter, given the full complexity and scale of power, the *process* is necessarily anchored in a focal goal of interest (desired outcome) or an outcome of interest. Framed by a focus on a goal of interest the logic becomes, explanation of what enables behaviour towards the goal of interest (Potential-influence) *before* an explanation of what then further conditions the enablers, that is behavioural resistance.

This theoretical approach avoids obligating an explanation of *all* that might enable *all* behaviours towards *all* goals first, and then regressing back to the that which explains the discrete behaviour of relevance and is held to reflect more realistically how individuals are induced to behave. There are limits to cognitive capacity and not all goals are relevant in the moment and to the matter in hand. It follows the rationale of specifying the smaller set of inclusions in business contracts rather than specifying the larger set of exclusions. It does not preclude capturing where a motive is formed by focusing on multiple goals moreover constitutes the simplest representation of the process that can be enlarged where multiple focal goals are relevant, such as, in formal goal prioritisation.

Behavioural resistance thereby serves as an important psychological force that not only justifies the existence of motive as a *governing* psychological force in determining behaviour but fully recognises individuals as semi-autonomous, thinking beings that pursue many different goals contemporaneously; not free-floating agents continuously pushed towards an end goal. An individual cannot engage in all behaviours all of time or at the same time. Goal conflicts and behaviour conflicts do arise. Reasoned behaviour choices (consciously, subconsciously, unconsciously) are necessary to navigate a way towards optimising goal attainment.

Furthermore, it establishes a fundamental distinction between Potential-influence and Actual-influence even in extreme *power-over* cases where A's reciprocal Potential-influence over B is born out B's *full* constrained dependence on A, whereas A only electively depends on B for goal attainment. In such A-B relationships, A's Potential-influence pertains to those goals of B for which A can contribute. Unless full constrained dependence pertains to *all* B's goals, such Potential-influence cannot be deemed to constitute Actual-influence, given stronger behavioural resistance may emerge based on B's goals for which A has no contribution. Full constrained dependence on *all* goals is the limiting case equivalent to absolute *power-over,* and even then, remains subject to B's capability; B does not have absolute power-over B (self).

Second, behaviour*al* resistance is distinct yet related to *behaviour resistance* that is a behaviour and power effect governed *by* a motive. The distinction is more subtle but necessary and clear. Where behavioural resistance contributes to *forming* motive for a discrete behaviour, behaviour resistance is a specific covert if not overt resistance towards engaging in a discrete behaviour that is governed *by motive*. It is a power effect that is a product of the influence process with direct consequences for outcomes. As a behaviour capturing an active resistance towards a discrete behaviour it is nevertheless thereafter intricately linked to Potential-influence and behavioural resistance through feed-back. Resistance formed to a discrete behaviour at a given time, such as A's resistance to supporting renewal of outsourcing contracts, may alter what is identified as A's behavioural resources (organised resources) and its significance to A's and B's goal attainment, that is as a Potential-influence. Once established, it may thereafter contribute to future behaviour either as a *relevant* Potential-influence in forming A or B's motive for future behaviour towards a *focal* goal, or as A or B's behavioural resistance in capturing relevance to *all* goals.

There is potential *learning* through feed-back from *all* behaviours induced not merely behaviour resistance. Behaviour preferences even practices may emerge. It is also where capability limits become increasingly recognised. Behavioural resistance is thus in part generated through continuous sense-making and reasoning processes of an individual and to some extent captures what *behaviour* an individual *might* engage in or *might* not engage in, generally. Behavioural resistance may be reduced or eliminated over time or in the moment, based on encounters with new Potential-influences. Nonetheless, behavioural resistance is readily *sustainable* in both *power-over* and *power-to* processes, whether or not a motive is formed submitting to relevant Potential-influences at a given time. This gives credence to a consensus-coercive continuum capturing the degree to which a potential inducement may be obtained under different levels of duress (or willingness), that is subject to different levels of *sustained* behavioural resistance encountered (positive, negative, neutral), rather than dichotomised notions of consensus versus coercion.

In general terms, where behavioural resistance emerges as a greater opposing force (negative) than the full force of all relevant Potential-influences, the Actual-influence necessary to induce the specific behaviour towards the focal goal of interest would not be generated. Actual-influence adversely affecting its attainment, favouring other goals (optimisation) may even be generated. Where behavioural resistance is an opposing force (negative) but not greater than the full force of all relevant Potential-influences, this would normally generate Actual-influence necessary to induce behaviour, but the behaviour may be different to that which would have been generated due to behavioural resistance. Where behavioural resistance is a supporting force (positive) capturing where the specific behaviour would not only contribute to the focal goal but supports other goals, this would normally generate Actual-influence. This Actual-influence may also be different to what would have been generated in the absence of positive behavioural resistance. Where behavioural resistance is neutral, signifies overall that the specific behaviour has a neutral or no impact on other goals. Actual-influence is formed directly by relevant Potential-influence, that if environmental influence is also neutral, is thereby *equivalent* to A's Potential-influence.

Paramount to obtaining the distinction between Potential-influence and behavioural resistance, is the delimiting, shaping, and orienting of the process towards a primary sense of direction, that is the line or purpose of an inquiry. This establishes a *meaningful* perspective, rendering such distinctions intelligible and consistent across different lines of inquiry from explanations of discrete behaviours (discrete process) through to more general inquiries into an ongoing process (continuous process). More specifically, it is through anchoring *the* goal of interest, *the* behaviour of interest and *the* performer of the behaviour that a meaningful perspective of the power process is obtainable. Behavioural resistance may be directed towards the demands and actions of the *other* emphasising a *power-over* perspective, or, directed towards demands and actions of the *self*, as a predominantly self-induced *power-to* process.

Nothing precludes or detracts from consideration of in-action rather the distinction between Potential-influence (contribution to a goal) and behavioural resistance

(protection of goals) promotes capturing more specifically the significance of abstaining from action (motive), as being lack of influence towards attainment of a goal (Potential-influence) or motivation towards protecting goals (behavioural resistance). Transparency in perspective and purpose, is therefore essential to interpreting any explanation of power or influence.

In conclusion, to advance theory validity is a testable empirical proposition P7,

P7:   Behavioural resistance is sustainable.

D.3.11 Motive

Core Definition: A type of psychological force formed by cognitive sense-making and reasoning processes residing in the mind of individuals that governs the formation of Actual and Enacted-influence.

First, motive is *formed* through cognitive processing and broadly speaking is the *reason* for a specific discrete behaviour. Motive stands as more comprehensive in *content* than is recognised under various legal systems where question of intent, pre-mediation, rationale, and responsibility, for example, may be treated independently. In the theory, there is no such delineation. Motive captures *the* psychological force responsible for the formation of Enacted-influence (Appendix D.3.7). As a reason for the enactment it corresponds with a general legal definition of motive as, an idea, belief, or emotion that impels a person to act in accordance with that state of mind but is extended to incorporate that which *directly* contributes to *its* formation and thereby *its* explanation as a motive.

Inspiration to formalise the content of motive through the Aristotelian causal framework emerged readily and logically during analysis of the test case study (TS). Defined more specifically in terms of the why, what, how, and when, facilitated analysis and exposition of embedded case descriptions of motives in influence or power terms (S-Appendix FR3-A1), according with the following.

Why? attends to the final cause of a motive, the sake for which, the end. This captures the content of the reason that describes the *purpose* of a motive. Viewed through an influence lens, this is a description of the discrete behaviour effect to be induced and includes the *specific* purpose of the discrete behaviour. Viewed through a power lens, the specific purpose of the behaviour is included and extends further to capturing any significant consequential outcomes that are relevant to the reason, and identifiable *broader* goals. This feature of motive thus implicitly defines the content of Enacted-influence or the nature of the psychological force(s), as that which is capable of generating, producing, or forming the discrete behaviour sought. Importantly it equally captures the *intent* behind the *discrete behaviour* that for power includes *consequences*, thereby

extending responsibility to outcomes whilst recognising that what is intended may not be realised (deviant behaviour; environment interference) and conversely what was not intended may nevertheless be realised.

What? attends to the material cause of a motive, that out of which a motive was formed, given why. This captures the content of the reason describing what *directly contributed* to forming the reason and is thereby embedded in the reason. Viewed through an influence lens, this includes all relevant Potential-influences (external, reciprocal, and internal) post conditioning by behavioural resistances, any means, and any other motives of significance, including the motives of others material to arriving at the reason for the discrete behaviour. Viewed through a power lens, material forms of contribution would extend to capturing access to specific resources (e.g. concrete, concrete mixer) intended to be consumed or employed in performing the discrete behaviour thereby contributing to an outcome (e.g. building). The material cause of motive captures the mental *context* of the motive including any direct (means) and indirect (environmental influence) inducements of others for the discrete behaviour and outcomes. In principle, the significance of *where* a motive is formed (location) is neither limited to nor necessarily given relevance by *physical* proximity of A or B often associated with answers to the question where, rather is captured categorically as arising in the mind of the performer of the behaviour (A or B) by virtue of all relevant Potential-influences, including environmental influence.

How? attends to the formal cause of a motive, the nature of the transformation, given why and what. This captures how the motive is formed that in all cases is through the cognitive processes of the performer of the behaviour (sense-making and reasoning). It may be possible to distinguish between certain motives as being formed unconsciously, sub-consciously or consciously. It may be possible to distinguish between the type of reasoning that led to formation of the motive generally as being rational versus irrational versus some combination. More specifically the reasoning process in the forming the motive might include such things as perceived abilities, specific judgements, or opinions on states of affairs, thereby *becoming* part of the motive. In doing so, the motive increasingly carries

more content or explanatory weight in terms of how the motive was formed that if complete would explain the transformation of all Potential-influences *into* Enacted-influence and may extend to the conditioning of the Potential-influences in becoming relevant in the first instance. Viewed through an influence lens, the formation of motive is less complex in principle than viewed through a power lens, given the narrower perspective. It is this feature of motive that captures the contribution and saliency of the *core mental capacity* of individuals to engage in complex evaluation and reasoning *processes*, in forming a motive.

When? attends to the efficient cause of a motive, not only when the motive was formed but importantly when and if it takes effect as the primary source of change (energy force), given why, what, and how. In accordance with Chapter 4, Section 4.3.2, Figure 23, motive is *basically* formed at time (t4) foremost as *induced* Actual-influence but only finally *formed* at time (t5) *when* it induces Enacted-influence. Distinguishing between the two states is central to establishing to what extent a discrete behaviour was planned or pre-meditated. Forming a motive to attend a scheduled meeting (t4) is not fully formed until the motive takes effect (t5) in inducing the act of meeting attendance. Equally, fully recognised is how a motive may be formed but then may not take *effect* given some future change in the why, what, or how of the motive that renders the motive either dormant or obsolete, such as the meeting is cancelled. Notably, motive is necessarily the same in its efficiency in finally inducing Enacted-influence whether viewed through an influence or power lens.

The why, what, how, and when *of* motive, explains how motive *is* thereby the efficient cause *of* influence and power as that which constitutes the primary source of change in inducing behaviour. It fully recognises individuals as semi-autonomous, *thinking* beings, consciously, sub-consciously and unconsciously. Without motive being formed *and* taking effect, there is no behaviour induced and there are no consequences of human behaviour other than through in-action; Nature alone determines outcomes. Influence and power are both however not reduceable to motive given the relevance all other components hold in both processes and the downwardly inclusive quality of IOR-influence and IOR-power

(multiplicity of processes). Motive equally does not by itself yield behaviour or outcomes obtained and thereby cannot fully explain influence or power. It is *the* motive that formally explains *Enacted-influence* that may or may not realise the intended behaviour or outcomes.

Notwithstanding, motive is also implicated in the very formation of goals that guide or lead the process. Motives are formed in the same manner by virtue of the process, but cognitive processes are focused on goal formation rather than goal attainment. If such goals are *informal* goals in that their forming is individual based and covert, it is possible to recognise this in Chapter 4, Section 4.3.2, Figure 23, as a *direct* feed-forward from motive to goals such that motive and goals, act out as an inter-play over time. Motives feed goals, goals lead motives. If such goals are *formal* goals, it is more represented by a motive that induces a formal decision to alter goals as an enacted decision that is communicated (power effect) as a formal decision outcome that then feeds-back and becomes a formalised goal change.

In conclusion, to advance theory validity is a testable empirical proposition P5,

P5: Individuals mentally negotiate reasons to behave consciously and subconsciously.

D.3.12 Actual-influence

Core Definition: A central type of psychological force formed as a mental capacity of an individual to induce a specific behaviour at will, where in an A-B relationship, the ability to generate this psychological force is assigned to the individual (self) or in part the other (A or B) or more broadly the environment.

Foremost, Actual-influence is a *real* ability to perform a specific behaviour, at will in pursuit of goal attainment. Actual-influence is formed through cognitive processes at the second level of the black box (covert behaviour). As a real ability to perform a specific behaviour it may be drawn upon or induced *by* a motive to generate Enacted-influence that *when* fully induced *directly forms* and induces the specific behaviour (Appendix D.3.11). Actual-influence nonetheless may be innately unstable due to process changes, from changes in organised resources to changing states of affairs.

Importantly, the real ability to perform a specific behaviour remains subject to sustaining or forming motive with the efficiency to draw upon the specific ability, that is, the maintaining of, *at will*. Motives are however also contingent on the broader process (Appendix D.3.11), *negotiated* and *emergent* in nature, and may regress in accordance with changes in the broader power process from which they emerged. That motives are contingent and temporally variable thus renders Actual-influence as a *real* ability contingent and temporal being always subject to obtaining an efficient motive for realisation.

It is recognising the saliency of time *and* motive, that permits reconciling paradoxical notions that Actual-influence exists as *real ability* to influence and induce a specified behaviour that can be employed *at will* with Actual-influence as an *unknowable contingent ability*. That an efficient motive is obtainable can only be *known* at the time the specific behaviour occurs. Actual-influence and Enacted-influence thus differ by state only *at* a given time, as realisable versus realised respectively. Given regression, both are also differentiated by the fact that what is *real* Actual-influence may exist whether known, enacted or not, rendering Enacted-influence a sub-set of Actual-influence, *over* time.

The significance of Actual-influence and Enacted-influence being only distinguishable by state *at* a given time is important in precluding the feasibility of a real ability to perform mutually exclusive behaviours at the same time. For example, that decision D is the enacted decision, must render decision D, the decision content of Actual-influence, as a real ability to make decision D, and not another decision, at the time. Actual-influence conceived as specific in terms of behaviour avoids it representing an ability corresponding to every *possible* decision rather than *the* decision that *can* be taken. This does not infer that the reality faced does not contain a range of possible decisions that *may* be taken rather is *why* Actual-influence is unknowable, a priori, as it remains subject to motive at the time.

That Actual-influence is unknowable and can only be given *a posteriori* based on Enacted-influence, does not render it superfluous to explaining power. It carries explanatory significance in the power process foremost as the theoretical bridge between all that *may* induce behaviour (Potential-influence) and that which *does* induce behaviour (Enacted-influence), as all that *can* induce behaviour (Actual-influence) at a given time. It further carries explanatory significance as something that may be *perceived* to exist. In the forming of motives *perceived* Actual-influence as a perceived ability to be employed at will, contributes as a *material cause* of a motive. That such perceptions may be erroneous explains how drawing on or relying on *perceived* Actual-influence in attempts to induce behaviour of the self or others can and do fail, and conversely how higher levels of induced behaviour of the self and others than anticipated are realised.

Recognising the important role of perceptions throughout the process renders meaningful the conception of perceived, but non-existent power. This specifically captures where *perceived* Actual-influence, were it to be drawn upon would not in fact induce the specific behaviour expected, and therefore had not been or remained *real* Actual-influence. Nevertheless, until recognised to be non-existent, perceived Actual-influence serves the same purpose in the formation of motives and attempts to induce behaviour and obtain outcomes as if it were real. Where *real* Actual-influence is recognised as unknowable, *perceptions* of Actual-

influence may also carry a quality of probability, signifying how some abilities to induce behaviour are more likely to be the case than others. In such cases, perceived Actual-influence is being treated more explicitly as a real *potential* ability, that is *Potential-influence*.

Actual-influence nevertheless remains a *real* ability to mentally induce a specific behaviour of an individual, at will, that may in part be assigned to others. It is a power *state* that is not directly observable, temporally contingent, and unknowable, but necessarily corresponding with Enacted-influence, at a given time. Actual-influence can only be inferred, implicated, assumed, estimated, or claimed to exist, but *is* a real *state* of explanatory significance.

In conclusion, to advance theory validity is a testable empirical proposition P6,

P6: Actual-influence is a contingent and temporal ability to induce behaviour of the self and others (attributed), at will.

D.3.13 IOR-Influence

Core Definition: A complex, emergent, regressive, and obscured psychological process that governs individual behaviour towards goal attainment.

Foremost are three foundational assumptions. Individuals are assumed to be semi-autonomous and have some freedom to govern themselves albeit enabled and constrained by the environment in which they exist. Individuals are further assumed to be thinking beings and mentally capable of the following: forming and connecting beliefs, ideas, opinions, desires, memories, and judgements; having awareness and expectations about things; imagining and having foresight about things and making decisions that enable individuals to govern their behaviour. Individuals are also assumed to be consciously, sub-consciously, or unconsciously goal driven and thereby motivated to behave towards attainment of goals, be that aims, desired results, or gratifications sought.

Second, influence is theorised as the psychological processes of sense-making and reasoning, collectively the *mental powers* of individuals governing individual behaviour constituting an integral yet distinct part of power. Explained in Aristotelian causal terms, influence is readily distinguishable from power as outlined in Chapter 4, Section 4.3.2.4. Although terminology is aligned to power as the more significance process for two of the four influence causes namely power sources, and power effects, in an isolated influence process both causes readily become identifiable as influence sources and influence effects.

Potential-influence, Actual-influence, and Enacted-influence capture mental influence states as central types of psychological forces or core states that during mental reasoning processes emerge and provide some level of *motivation* or *inducement* towards a specific behaviour and thereby some level of *ability* to induce the specific behaviour. The process is complex in that, even adopting a narrow perspective of an A-B relationship where A and B are individuals, there are four discrete processes that are occurring contemporaneously that combine if not collide such that *assignment* of ability and what such ability signifies is crucial to interpretation.

Conditioned constantly by environmental influence including inducements, foremost influence arises a process of *self-induced* behaviour towards goal attainment based on a level of independence or freedom to do so and capability, for both A and B (two processes). It is also a process of *reciprocally induced* behaviour by A or B based on a level of dependence of A on B and vice versa (inter-dependence) for goal attainment (two processes). The range and complexity of goals (essentially and structurally) leading these four processes and the range and type of dependences (constrained-elected; secured-unsecured) amidst which there are degrees of A and B mutuality in goals and dependences, frames all four influence processes.

Faced by a constantly changing life-world through feed-back and feed-forward, these processes are dynamic whereby core influence states emerge and can regress over time subject to the mental capacities of A and B. When states regress, they may only become dormant or inactive rather than disappear (obsolete) and may remerge when relevant to a matter at hand. Recognising when states are dormant or active is not self-evident given mental processing occurs at unconscious and sub-conscious levels of the mind, not merely the conscious level. Moreover, influence *is* a complex continuous *process* constituted by a flux (flows) of Potential-influence, Actual-influence, and Enacted-influence emerging and regressing over time in the *mind* of an individual.

Third, the black box of reasoning and sense-making ultimately captures the transformation of real Actual-influence into real Enacted-influence governed by a real motive(s). Deeply embedded in the minds of individuals, all such transformations and notably motives are not necessarily fully sensed or explainable by individuals, nor directly observable. Motives are continuously formed and re-formed by shifting *perceptions* of the life-world and mental stances adopted about the life-world as individuals navigate a way forward towards goal attainment. Motives may be misplaced where perception and reality are mis-aligned and are thereby not given by circumstances rather necessarily idiosyncratic and subject thereafter to deviant behaviour.

Importantly, it may be the case that A or B behaves in some specific manner and the core ability to do so, and responsibility thereof manifestly rests with the performer of the behaviour, A or B. It may also be the case that the extent to which such behaviour is self-induced, or reciprocally induced (B or A respectively) or induced by others (environment), is not readily discernible. Not only is motive obscured, over time the process naturally becomes historically rooted. Assignment of ability and responsibility for behaviour may be deemed strongly grounded in or induced by some historical event or act. Assignment of the ability and responsibility for behaviour automatically to the performer of the behaviour may in fact be rather tenuous and requires *due* consideration.

Thus although motives and behaviour may to some extent be anticipated or expected based on insights to the mental processes of an individual, such as goals, values, and ways of thinking, and/or prior behaviour revealing behaviour traits and practices, both are far from knowable in advance. That motives are obscured and indeterminate yet held to be the real epicentre of influence constituting its efficient cause, explaining why, what, how, and *when* behaviours occur, renders influence obscured and indeterminate.

Lastly, adopting a perspective that explains the influence process in its simplest form, an embedded A-B relationship where A and B are individuals, provides an *essential* theoretical building block to explaining influence at the IOR level, given the process is held to *occur* in the mind of individuals. Individuals A and B are captured realistically at the epicentre of a multiplicity of such relationships (A-C; A-D; A-E and B-C; B-D; B-F etc…) by component environment. To determine IOR-influence is to obtain a downwardly inclusive combination of influence processes for *all* embedded A-B relationships (horizontal and vertical extension) through time (longitudinal extension) capturing all the behaviour of all organisation members. This is a myriad of interwoven processes that is too complex to determine not least given it is both thereby highly obscured and dynamic.

The explanatory theory serves as a lens to understand and explore the processes of influence within IORs, directing attention to the saliency of motive and thereby the perspective of the individuals whose behaviours are of interest.

In conclusion, to advance theory validity is a testable empirical proposition P9,

P9:   IOR-influence is a complex, emergent, regressive, and obscured flux of discrete influence processes.

D.3.14 Power

Core Definition: An emergent and indeterminate social and natural process governing outcomes.

Foremost, the *power-to* process, whereby A or B, has the ability to induce behaviour of the self, is consistent with the power-over process, logically standing together in explaining behaviour of an indivisible individual (A or B). The distinction between the two processes lies primarily in the *origin* of influence being the self (power-to) or other (power-over) and implications thereof for goal attainment.

Second, prominence is given to the fact that outcomes are realised through a combination of behaviours *at work* attributable to humans, human creations, and Nature, and all resources employed, exploited, or consumed. This is given by what is necessary to meet the goals of organisations thereby formal goals of embedded members albeit not limited by such goals (Appendix D.3.3). Any *explanation* of IOR-power is incomplete if it does not attend to the significance of *all* such behaviours and resources.

Third, highly significant is that whilst the explanatory theory formally and clearly distinguishes between power and influence, an essential relation is retained, whereby influence is integral to power and both necessarily have the same *efficient* cause, motive. As such, one cannot be influential and unable to induce behaviour (self / others) or powerful and unable to realise significant outcomes. However, one can be influential yet not powerful, but one cannot be powerful and not influential; if one *is* powerful, then one *is* influential (self or others).

Lastly, that influence is integral to power renders all that is relevant to influence relevant to power. Power is rendered a goal led, historically grounded, obscured, and indeterminate process constituted by three core *states* of influence (potential, actual, and enacted) capturing increasing levels of *ability* to induce specific behaviours (self; others) towards goal attainment, ultimately governed by individual motives. Although the states of influence might readily be identified as power states, that is potential power, actual power, and enacted power,

purposefully the states are formally identified with influence to permit clear alignment with natural forms of power as follows.

Influence as psychological forces at work generates *mental work done* in social power, aligning with physical forces at work generating *physical* work done in physical power, mechanical forces at work generating *mechanical work done* in mechanical power, electrical forces at work generating *electrical* work done in electrical power, and chemical forces at work generating *chemical* work done in chemical power. All these types of work done or energy transfer, occur *within* or are generated *by*, human beings, human creations (machines and technology), and Nature generally (wind, thermal, magnetic etc.), and all occur over time thereby fundamentally aligning social and natural power (work done over time).

IOR-power is thus theoretically led by social power but not limited to social power rather intricately connected to all forms of natural power. It is more meaningful to explain IOR-power in terms of all real types of power collectively, but nonetheless highly complex and is why it is invariably necessary to adopt a perspective as an explanatory power lens rather than seek to determine IOR-power, that is, an indeterminable *process*.

In conclusion, to advance theory validity is a testable empirical proposition P10,

P10: IOR-power is a contingent and indeterminate process.

D.4 Conceptual framework complimentary models
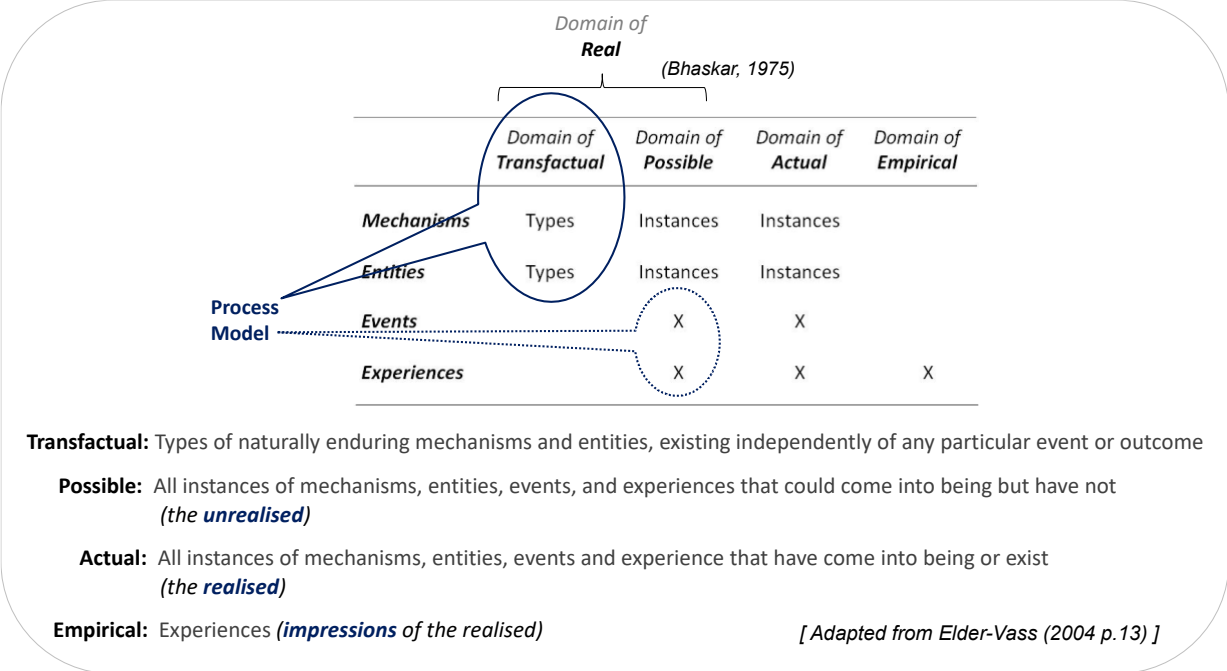
Figure D-1. Reality domains
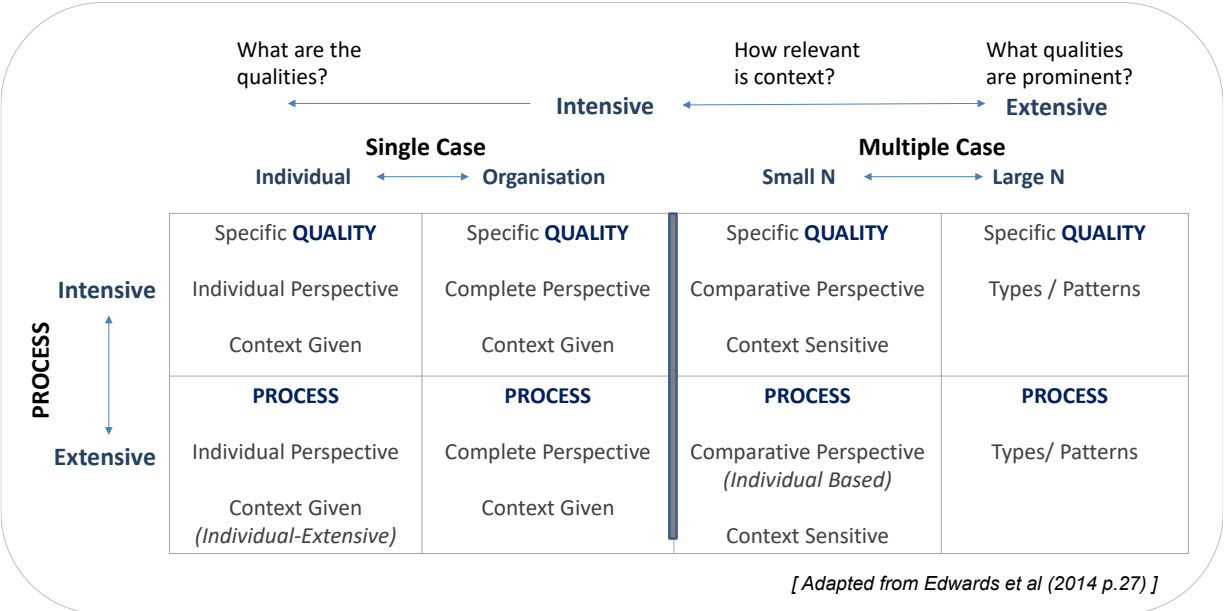
Figure D-2. Defining perspective to be determined
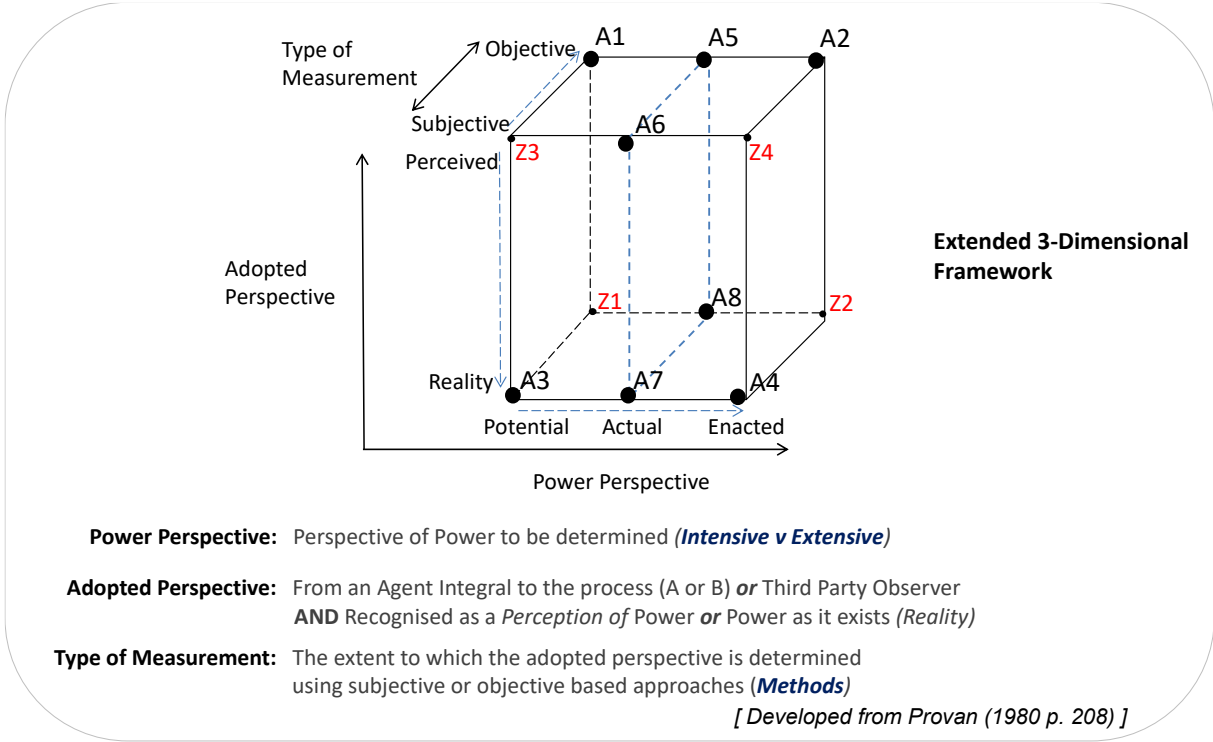
Figure D-3. Qualifying measurements

D.5 Process model complimentary models
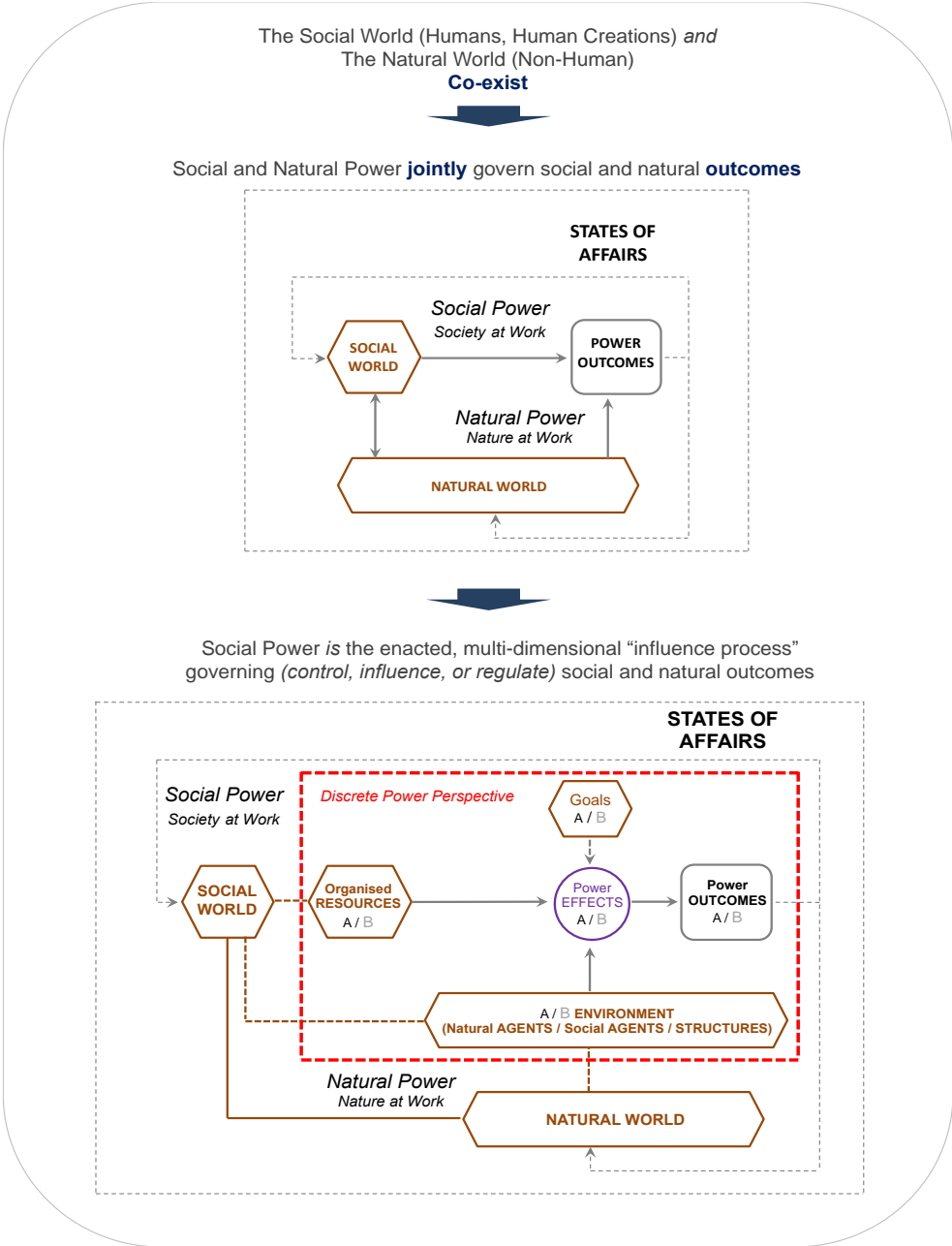
Figure D-4. Embeddedness in the social world and natural world
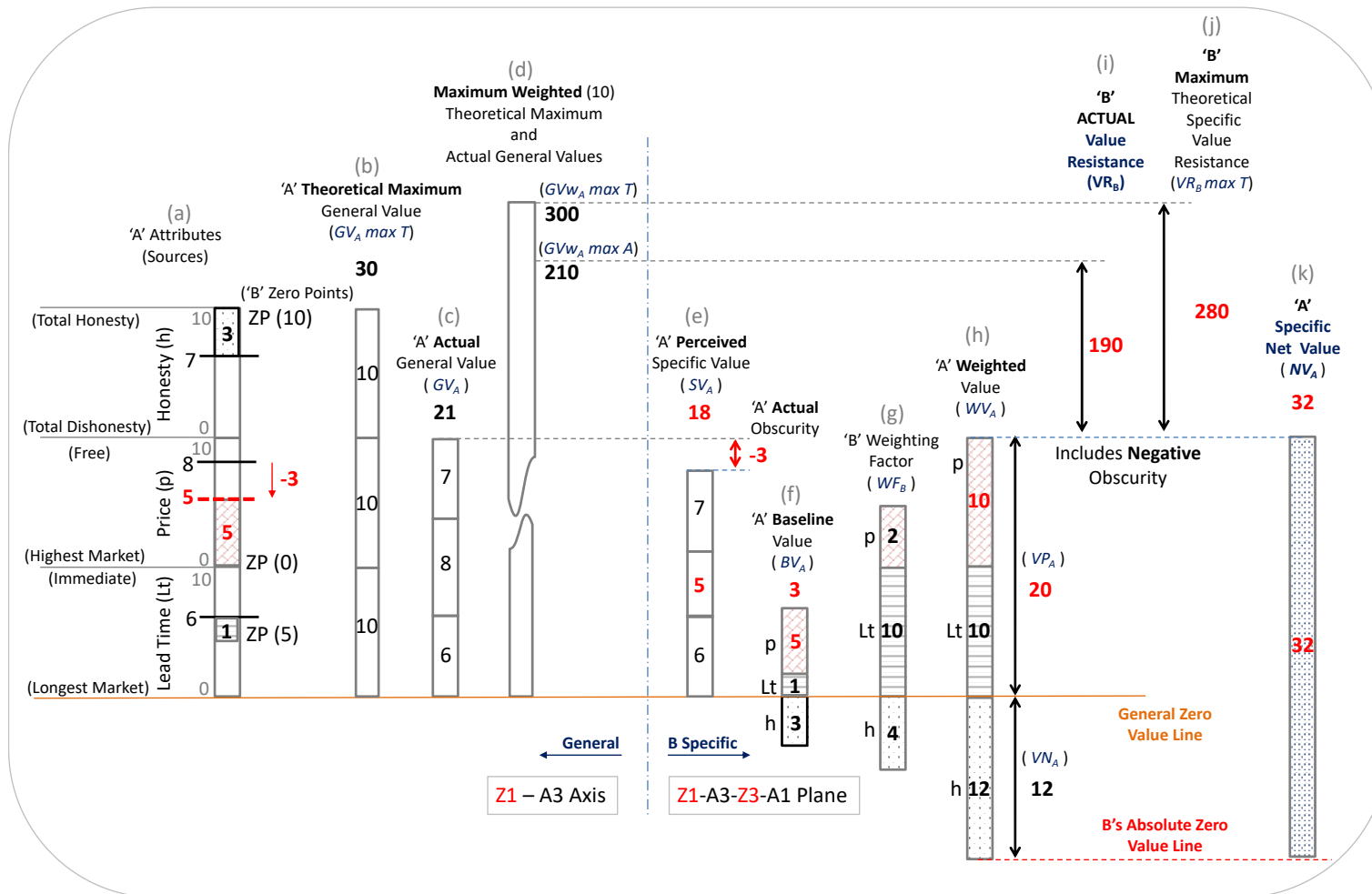
Figure D-5. Theoretical evaluation system adopting value as unit of force
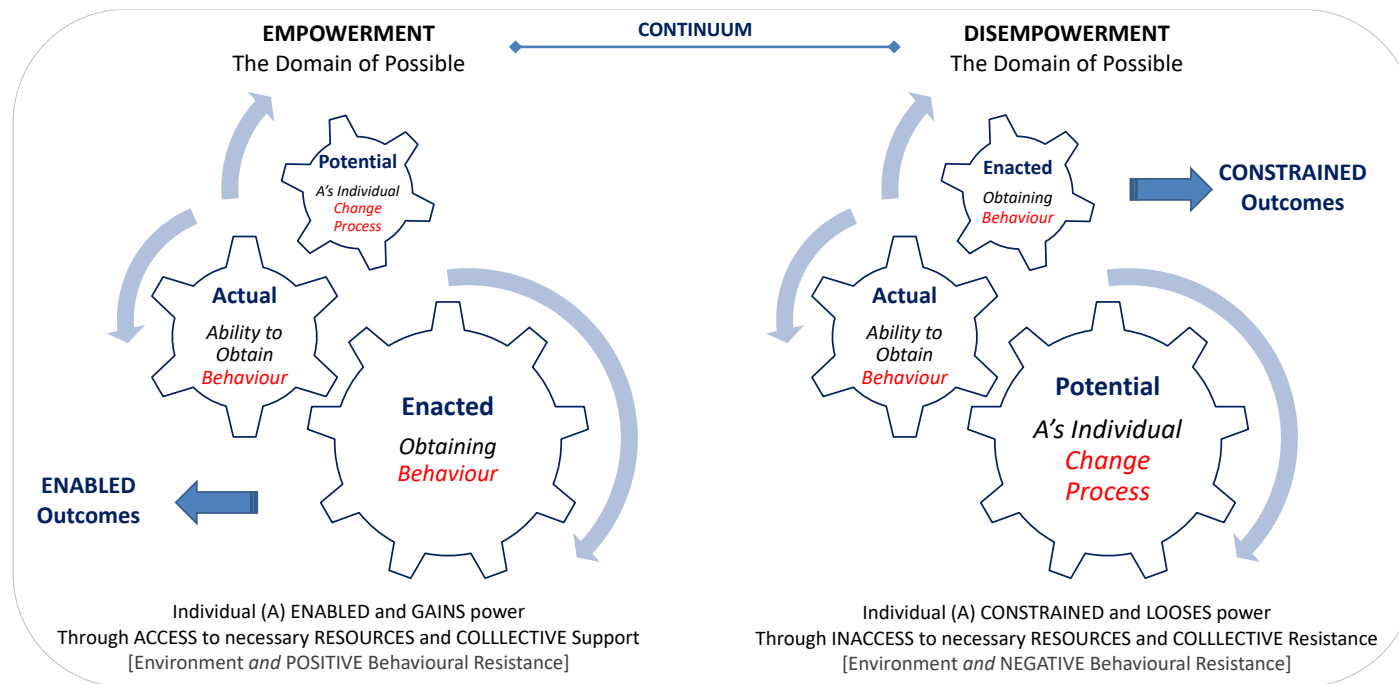
Figure D-6. Empowerment-disempowerment as a dimension of domain Possible

Appendix E Analysis and Findings

E.1 Exploratory study tentative propositions and additional extracts

E.1.1 Definition

No.	Tentative Propositions	Theme	Additional Excerpts	Case
1	Power is difficult to define, articulate, or express?	**Difficult**	Well that was really my first question because power is a rather vague definition in a business context. It's a relatively straight forward definition in an engineering context.	A
2	Power is related to authority and ability of individuals and organisations through various methods to control, influence, or steer decisions, plans, approaches, situations, and actions of the self and others towards something sought after? Any such power is subject to prevailing conditions and the power of others (freedom) including the environment (social and natural) and might only be considered to be power if successful?	**General**	…because at the end of the day there is a consequence of power, or power is that you reach an output and if you don't have the capability to use it then you don't achieve your output.	B
2		**General**	…power in its own right isn't enough [win through] because power has got to be tempered in some way with, with other qualities, like inclusiveness and democracy, and so on and so forth, so to succeed in an objective we need to apply power in the most appropriate manner.	C
3	Different types of power are distinguished based on the origins, context, methods adopted, or outcomes associated with a given power?	**Types**	Is it powerful because it's very profitable? Is it powerful because it's got an excellent very highly qualified team?... That [types of power] brings to mind what power, what influence do, can bring to the negotiating table. The concept of, you know, what the partnership is intended to do, that will also influence the amount of power each of the participants bring to it.	A
3		**Types**	I think there's like a positive power [and] negative power where you force a situation.	D
4	Meaning attributed to power becomes clearer and possibly extended through reflection and discussion on how to describe or define power and experiences of power?	**Clarity of Meaning**	...then I'm thinking more team, consensus, and things like that rather than power lying in one part, so power is evidenced in a relationship when it's imbalanced. When it's very balanced perhaps power isn't so obvious but it, power still exists but it is shared. Maybe a different idea that I haven't really thought about that perhaps, power is always there.	C

Table E-1. Tentative propositions related to defining power

E.1.2 Nature

No.	Tentative Propositions	Theme	Additional Excerpts	Case
5	Power is manifest in both strategic and operational areas of partnerships related to formal negotiations (decisions; agreements) and actions taken to obtain tangible outcomes?	Strategic – Operational	In the [joint venture] negotiation we were more powerful, because we were putting more on the table than they were.	A
6	A general sense of certain power being more or less important than others and of varying amount or strength relates to the effect concerned and the likelihood of obtaining the effect?	Important – Irrelevant Strong – Weak	...obviously it's higher the power level at the CEO-to-CEO level than at the engineer-to-engineer level. I mean the engineers are not normally authorised to make decisions together, or not in terms of fundamental agreements about partnerships.	D
7	Power in a partnership correspondingly may or may not be balanced and it may be that power is more noticeable (Visible-Non Visible) as the level of imbalance increases or when it takes effect especially when misused?	Balanced – Imbalanced	Sometimes it's fairly balanced, sometimes it's very imbalanced...In my mind power, using power to achieve a decision against the will of another party is always a situation where there is an imbalance.	B
8	Power can be sought out even negotiated or 'taken' rather than being bestowed through formal structures and hierarchy (inherited)? Conversely, a lack of power may be inherited or emerge, begging the question as to whether this state is ever sought or necessarily avoided?	Inherited – Sought Out	Power as a concept is something whereby one party either seeks or seeks out or inherits in some fashion some sort of leverage over another - either a person or an organisation and some people seem to seek it out for what it is - in itself.	C
			...so, it's something that I have inherited. I would say that we [manufacturer] are dependent on this partnership.	D
9	Power is recognised to accumulate or increase or decrease and at varying speeds, namely immediate or delayed, and may or may not endure over the short term or long-term evoking a temporal and provisional sense to power?	Constant – Changing	I started out with quite a bit of power and then I lost it.	C
			'…we now have other co-operations with them, where it's now on an equal footing for different products… we have the power that we are developing new products and services constantly and we have the power to go somewhere else.	D
10	Corresponding with power as enduring or changing over time (Constant-Changing) power manifests itself as a dynamic process subject on the one hand to capabilities and on the other hand goals thereafter risks and opportunities that emerge?	Dynamic Process	'… what the partnership is intended to do [goals], that will also influence the amount of power each of the participants bring to it [relevant capabilities]	A
			So, it's not necessarily that one partner is, always has the upper hand, depending on what happens the power may shift between two organisations.	C

Table E-2. Tentative propositions related to the nature of power

E.1.3 Distribution

No.	Tentative Propositions	Theme	Additional Excerpts	Case
11	There are overlapping power fields in partnerships where individuals effectively represent embedded power nodes (points of connection) of varying significance or strength, each acting based on interpretation of the field of power and personal characteristics?	Distribution **Dynamic Field**	There are many lords and masters that I am trying to please in that situation. I am trying to please the end customer. I'm trying to please the hierarchical structure within Company A who are asking for certain things, and I am trying to please the structure within my own part of the company [Company B].	C
			Some people even at certain levels in the organisation are more powerful than others. That might, that's something to do with their personal characteristics and maybe the type of role and how they approach it, or because actually they've built networks [relationships] throughout the organisation, you know when they talk about inverted power.	C
12	Partnership power is a resultant power emerging from a mix of power between that formed within the partnership and powers of the parent organisations directly operating within the partnership, extending the complexity of power and range of relevant power perspectives?		At the end of the day [even] if it's a partnership there is still a distinction between that and a single entity. Your objective in a partnership is to produce the maximum benefit for your side.	A
13	Norms and expectations developed over time are an integral part of how power distributions arise and are sustained but does not preclude challenges that alter such power distributions over time?	Distribution **Environment**	Perhaps historically the man in the family always has had more power... which these days we know is not so common and that there's many different variants of that and challenges to that, why should it be at all. So that's a historical thing for whatever reason from many years back."	B
14	Where acknowledged external powers (e.g. regulatory authorities) attribute 'ultimate responsibility' to organisations, authoritative / hierarchical power is generated but equally liabilities that may lead to unwanted dependence?		It's the product they [prime manufacture] have responsibility for...the ultimate power to make a decision of that sort would be with [them] because of their position in the hierarchy of the product.*"	B
15	An absence of power may reflect moreover a constraint where the power in question resides wholly or in part with other entities (individuals; organisations)?		the person doing the negotiating... did not have the authority. so, they would disappear off for half an hour on the telephone to find out if they were allowed to say yes or no."	A

Table E-3. Tentative propositions related to power distribution

E.1.4 Perspectives

No.	Tentative Propositions	Theme	Additional Excerpts	Case
16	Non-rational power and consensual power may not be readily acknowledged or recognised?	**Non-Rational Consensual**	I tend not to think of that probably because I don't like the non-rational use of anything because I'm a rational person. I would link non-rational power to negative use of power. Maybe that's because I would tend to think that something you want to achieve that's positive ought to be rational. We talked a bit before about having to make decisions sometimes which seem to conflict with the consensus, that can be interpreted as non-rational by the other parties. In my observation [company A] has invented certain models of how they wanted the supply chain to work I would say was non-rational.	B
17	A generic model of power in supply chain partnerships as a *micro* building block should depict a 'business' to 'business' relationship accounting for the full range of partnership types including joint ventures and project-based partnerships possibly between multiple organisations, and needs to maintain validity within a *macro* perspective capturing the partnership *embedded* in its Environment?	**Micro-Macro**	When you put it at a macro [level], you will find as you've just said that the relationship's slightly more complex. The question perhaps in part is whether within that bigger model, you can continue to maintain a micro model.	B
18	A generic model of power in supply chain partnerships should depict the *complexity* of power relations *between* each partner organisation and the partnership relationship formed (relational boundary) at different *levels*, recognising individuals may be partly or fully embedded in the partnership?		…so, the power between happens at so many different levels.	C
19	Power outside the formal business *context* may or may not be readily recognised and may or may not be viewed differently?	**Context**	I never really thought about power in my personal life… I can't actually relate power to, to a personal, domestic situation.	A
			I think in a business world we're, yes, it is much more ruthless, and you know that the impact any power or decision causes, although it will affect you at work, it will not affect your family or child. So, it's different. You protect your family more; you will not stop to protect.	D

Table E-4. Tentative propositions related to perspectives of power

E.1.5 Utility of initial framework and model

Utility	Framework	Theme	Model	Case
Form	More this one [framework]… Probably because this is more expressive, it goes into more detail.	**Reference**		D
Function	I think diagram 1 [framework] was helpful because it gives, it gave me some more, it verbalised it. I'm a wordy person, that might be part of it, so it gave me words to help me through.			C
Validity	I have absolutely no problem with the power sources and no problem at all with the power effects. I think there is a little bit of debate in terms of the nature	**Comprehensive**		C
	Yes, ok but this [framework] is comprehensive, and I think that it covers the whole thing.			A
			This is fine as a model for a limited scenario. Where you have someone clearly identified as a customer and someone clearly identified as a supplier. When you put it in a bigger context, the person we call customer in one model might be a supplier in another. So at a micro level this is fine. When you put it at a macro you will find as you've just said that the relationship's slightly more complex.	B

Table E-5. Additional excerpts related to initial framework and model utility

E.2 Confirmatory study tentative re-description and additional extracts

E.2.1 Governing principles

No.	Governing Principles	Quality	Primary Re-Description	Additional Excerpts	Case
1	Power-Over is integral to Power-To.	Power TO (Foremost)	**Model** Process *Definition*	My simple notion of power would be sort of around the inherent, latent power of that organisation, which would engage in whatever… Actually I much prefer that [dispositional power] to my simplistic original position	X
2	A consensual continuum lies between full coercion and full consensus in inducing behaviour. Power is characterised by continuums or dimensions.	Continuums	**Framework** NEW Attribute *Perspective*	[Value Resistance] It varies as the, you know, you value 10, but somebody might have in 5 under values.	W
3	Intermediate / contributary outcomes are metaphorical power-points within a broader continuous process**.**	Power Points	**Model** NEW Component *Outcomes*	I can think of other examples in my procurement days when Q (Senior Manager) used to shout and swear at people, and they then passed that on to the suppliers, because they were feeling the heat and they, they passed the heat on to the suppliers.	Z
4	All formal and informal relations / relationships between humans and their respective environments serve as conduits of influence.	Formal / Informal	**Model** Black Box *Definition*	As soon as you try and exert power, you're defining the channel of that relationship because you can say why've you got power, and you define the nature of the relationship… So, this 'structures' team here can get this 'structures' team here to do what they want them to do, something technical, to agree it, but they can't leverage the commercial bit that gets it to happen [commercial team].	X
				I mean there are other relationships, non-contractual and non-supplier related with organisations Y, and others, but anything that, [rather] most things end up having some sort of contractual or formal agreement.	Y
				I cannot fully understand how every relationship can be 'specifically classified' under type as this seems too descriptive and myriad.	Z
5	Emergence fundamentally characterises power at the individual psychological process level thereafter extension through to collective behaviour and outcomes.	Emergence	**Framework** Connectivity **Model** NEW Components *States / Time*	So, I've just gone full circle. I can buy it because if I as an individual chose to do something in a particular way then that's still me being an individual, and you can say that those things are part of that this composite individual that's an organisation.	X
				I can see that there is a flow through and there are different things kind of mitigating against it, so that you know you start here and then you get here and then you get to eventually, what actually what happens.	Z

No.	Governing Principles	Quality	Primary Re-Description	Additional Excerpts	Case
6	Ontological depth unearths the complexity of power.	Dialectical Critical Realism	**Framework** NEW Attribute *Reality* **Model** *Real Definition*	By not doing anything, can influence, like you've not taken that week [holiday] or whatever.	X
				Actually, because this is not a process model in my language, all these things are actually in parallel they all exist at the same time, and they all interact with each other. Trust, commitment, engagement, are measures of where you are in that, overall, given that all these things happen simultaneously. They're a measure of what things are like rather than an element of what you're doing with it.	Y
				It says that will alter the behaviour in a specified way, so it's in a specified way is implying that it is specified, so it's neither unexpected, it might be, it might be unwanted, but it isn't unexpected is it, because it's specified. So, we're going to do this and that, it's got to be, if it's specified it must be known about, a known thing.	Z
7	Conceptual framework descriptively complements the process model that is a real definition with existential commitment.	CF-PM Alignment	**Framework / Model** *Fully Aligned*	When you start looking at the attributes, thinking about attributes, asking the questions about attributes and then you go to the value resistance and power sources, means, and all that sort of thing, it all comes to life on there [PM].	W
				'[Expression] The language is a bit strange for me just now. I'm interpreting a lot of words here and as I'm reading attribute here [Glossary], attribute is a quality or feature or inherent part of power. My logic would be, if I think of power not being expressed then it can't have an impact on anything and sort of isn't powerful, so it sort of has to be expressed in order to be active.	Y
				Yeah, are we trying to say, expression is an attribute of power, or this statement is an attribute of power? I'm confused between these two.	Z
8	Attributing power and thereby responsibility for outcomes is problematic.	Attribution	**Framework** Attribution *Definition*	But how can you possibly have an instrument like a tape measure, or a device marked in standard units to measure dependency or something like that?	W
				So, is there something that says that an organisation has got to have certain facets, to define itself as an organisation? You need to define it don't you for the purposes of, or do you? You could get people to define it for themselves in some way.	X
				These [PI etc.] aren't in the black box though. You're saying these are visible to us and, and accessible, and quantifiable and that kind of thing [so] they're not in the black box? None of it is particularly visible, is it?	Z

Table E-6. Governing principles requiring formalisation

E.2.2 Key Concepts

No.	Key Concept	Quality	Primary Re-Description	Additional Excerpts	Case
1	Outcomes as distinct from direct behaviour effects.	Outcomes	**Model** *NEW Components*	I have in my head that I can see power between groups, individuals, and the effect on whatever they are working for from being organisations, and what effect it can have on the environment.	W
				I mean the downstream effects might be the performance of the company, but the immediate effects of power in the relationship are what you and I say and do in this meeting, or, what we say or what we do immediately after the meeting and carry on doing. So, it's not to do with the long-term performance of the organisation and the long-term output or results?	Z
2	Social and natural environment fully implicated in outcomes.	Goals		I mean, the classic example is the pursuit of cost reduction and the schedule and where there will be two different groups in X [Company] targeted with different objectives all in pursuit of a top-level objective which is improving X's return on sales or something. But the way they interact with other organisations say Y [Company} is inconsistent.	Y
3	Goals drive behaviour and qualify outcomes as intended, efficient and effective, or not.	Environment		…the knowledge that I have, the effect it [natural power] can have on the environment, the [direct] effect it can have on, on people and places.	W
4	Material resources are exploited and consumed in obtaining IOR outcomes	Organised Resources	**Model** *NEW Component*	…but it [organisation] might deploy those with some IT, it might use IT to enhance its impact… So, in means you're talking about the process itself rather than the things you'll use throughout the process?	X
				I'm involved in a deliverable based type process within our business, where we have to achieve things, where we make stuff…	Y
5	Psychological states of influence are ontologically distinct.	States	**Model** *NEW Components*	But in my world if you've got potential, it's been identified, it has been in some shape or form no matter how small, been identified [Actual-influence].	W
				I understand that it's influenced by these things, changed by these things, and it becomes differently shaped, smaller, larger whatever, and then it's influenced again, but the potential, actual, and the enacted… they don't help me understand the model.	Z

No.	Key Concept	Quality	Primary Re-Description	Additional Excerpts	Case
6	Power transcends domains of the possible, actual, and empirical. Power is grounded at the individual level emerging at the IOR level.	Reality	**Framework** *NEW Attribute* **Model** *Adjustments*	So, it's the hidden curriculum.	W
				I agree it's important to be clear what level of reality is being assumed on each agent's part.	Y
				Objective reality is that an entity or not when you say an objective reality. Is an objective reality the same thing as an entity?... No, it's not, no its not, you see you've used the term entity in here, so something could exist independent of the mind, but it might not be an entity.	Z
7	Process horizontal, vertical, and longitudinal extensions circumscribe a given collective power.	Perspective	**Framework** *NEW Attribute*	You've got to have those pins in in the rocks when you are rock climbing. You've got a rope to link one to the other... so that, the guy at the top has… is able to pull you up	W
				So, I think I sort of find I'm going to be disagreeing with this because I think the model doesn't adequately deal with the larger organisations with multiple purchases which are not all well-coordinated. The mechanism that is used to address that, which is one of escalation and arbitration, which for me is the way X tends to deal with those things, and the clever companies outside know. They don't waste time talking to x {division of X} they have contact in X, so, they bi-pass all the people in the lower levels in order to achieve any sensible decision and commitment higher up.	Y
				I'm just thinking that those sorts of limits are frequently the result of conflict with some overall objectives. For instance, reducing lead time. If it's not feasible, if it's not possible. It's either technically impossible so the constraint is technical, or, it could be commercially constrained, in other words they could do but they won't because it's too much money or no agreement to do it. Are those sorts of things, is that what you're thinking of?	Y
	The full scope or limits of a given power requires establishing all classification attributes.			Because you're not going to - you're not going to sleep tonight, because you're going to be going agh! why did she find it so difficult {laughter} and I'm not going to sleep because agh! I was trying so hard {laughter} but that wouldn't exist in any other, you know, that might not exist in any, any other interaction that takes place between any other social agents today in the rest of the world. So how could we classify that? It can be described, but it's this definable and classifiable, that I'm really struggling with.	Z

242

No.	Key Concept	Quality	Primary Re-Description	Additional Excerpts	Case
8	Identity (raison d'être) is central to mental processing as an integral perspective explaining behaviour.	Identity	**Model** Black Box *Definition*	'… and any individualism is facilitated by the nature of the whole. So, for instance Mr X at SWA [airline] goes and sorts a customer out in a unique and personal way but actually the organisation says that if you get these particular circumstances, please do that. So even though it's a unique and individual action, it's actually part of the nature of the whole.	X
				The model can apply to both. Where there's a structured decision process, that's overt and documented in there like meetings, presentations, and reviews and so on that's, that's one of the ways in which this can happen, subconscious is just another way.	Y

Table E-7. Key embedded concepts requiring theoretical prominence

E.2.3 Qualifications

No.	Qualifications	Quality	Primary Re-Description	Additional Excerpts	Case
1	Discernible multi-dimensional state and basis of Potential-influence.	Dependence	**Model** *NEW State*	Well the type of dependence, when you're talking about dependence, it sounds ridiculous to say but really, it's only related to power in so much as the relationship between people and the people involved, as social agents, and how they work it out.	W
				… but they might not be things that are valued they might be things that are feared, or they might be sources of anxiety, not just things that are valued. Things that are valued is putting a really positive spin on power, but power can be really negative, can't it.	Z
				So, you've used a word inter-dependence, which I, which I warm towards.	Z
2	The distinction between resistance types	Value v Intrinsic Resistance	**Model** Existing Components *Definition*	We talked about the, how much money we could save an airline by taking weight out in digital amounts, in how to get an extra passenger on or whatever, and then you've got the resistance there [IR] as the believability of that value. So, they'll factor it down by that and that. It's obscured because it's obscured through your calcs and their ability to buy into, yeah, it's that believability [real utility; importance].	X
				Why have you decided to put those that way round or why is, how did you position these, in terms of the positioning of the boxes? Just for the record we're talking about VR and IR. Could you actually swap those around? I'm just saying because what you're saying is, that some of these, some of these sources may be obscured, in which case how, how can they be valued?	Z
3	Significance of the distinction between states	Potential v Actual Influence	*And* **Model** *Adjustments*	Would that [capability limits] involve your beliefs as well, [beliefs] would influence your behaviour?	W
				Is that not intrinsic [IR]? Because I'm not capable of doing it? Behaviour is more about whether I'll want to do it, or choose to do it, than being incapable of it? I'm just wrestling a bit with B [agent] being incapable of doing something and why that isn't intrinsic rather than behaviour [resistance].	Z
4	Specific role as distinct from value and intrinsic resistance thereafter Potential-influence.	Behavioural Resistance		So, this [PI] is the kind of maximum that's available, then moderated by other factors in a given situation.	X

No.	Qualifications	Quality	Primary Re-Description	Additional Excerpts	Case
5	Actual-influence as obscured and temporal yet real and meaningful.	Actual Influence v Enacted Influence	**Model** Existing Components *Definition* **And** **Model** *Adjustments*	[AI] So, you don't know that it will, you know that it won't? …I'm sorry, I'm not going to get there [understand].	Z
				So, is this, is this the trigger I'm looking for, it's the means?... Are you saying this (effects) can happen without that (means)?	Z
	Significance of the distinction between states.			I'm interested in what we term these [AI; EI]. That'll be an important factor.	X
				You could argue that there are other types of acts which either transfer power, in other words something that one agent does to try and move power from A to B… Or actually destroy power.	Y
6	Represents the human mental processing activity of reasoning and sense-making.	Black Box	**Model** Black Box *Definition*	See, I'm not sure I agree with the size of the black box. So, I agree that these two things [AI and EI] fall in a black box but possibly more. Yes, so the black box is probably bigger than you've drawn it in my head, and that's where I'm having all the various struggles.	Z
	Emerges metaphorically as a higher-level junction box representing joint decision-making processes.			So maybe this model attempts to step beyond basic conscious decision making into one where subconscious influence can also be reflected in a model?	Y
7	The position of motive in the process and relation to other process components.	Motive	**Model** Motive *Definition*	You've got to examine that [motive] very, very carefully because if you don't, you'll never come to agreement. You've got to know what's behind it all.	W
				This isn't where I think motive comes [position]. I mean I don't know. I think motive is part of this [upstream process]. They're all too close [environment, BR, motive].	Z
8	The natural and meaningful delineation yet inextricable link between power (outcomes) and influence (effects).	Power versus Influence	**Model** *NEW Components*	I could influence others, or I have influenced others in the past and changed their behaviour, and the changing of their behaviour is where I have had power over that kid, but I never saw it as that.	W

No.	Qualifications	Quality	Primary Re-Description	Additional Excerpts	Case
8	Power management aligns to performance management.	Power versus Influence	**Model** *NEW Components*	I agree the judgement on what's abuse and what's not is a moral judgement or a legal judgement in some cases, and one which we can't discuss without a detailed specific example. But clearly abuse of power does occur. I don't think one could argue that that's not true, and therefore, if the model is covering all uses of power, then it needs to make sure that that aspect is visible or can be interpreted within it.	Y
				I guess, if I look at the model in the context of abuse, I would hypothesise for you that generally in the assessment of whether it was abuse or not is probably about value judgements around power effects more than any other box on the chart. Because generally speaking you are observing the effects and judging whether they are considered moral, legal whatever else. So, that discussion is around one element of that, and it indicates that the model is capable of absorbing that concept but it's not in itself trying to form a judgement.	Y
				So, there is power in the interaction between the groups, these people and groups coming together having ideas and reaching an agreement. [This] would be a good way to enhance the organisation they work for.	W

Table E-8. Qualification of concepts to enhance theoretical clarity

E.2.4 Core principles

No.	Core Principles	Quality	Primary Re-Description	Additional Excerpts	Case
1	Social power and natural power align and connect.	Natural Alignment	**Model** *NEW State*	'[natural power] What it enables also, it enables people to have electricity and gas and all the other things that come from the scientific approach. You turn the power on is an expression which is to do with electricity, which is to do with the natural sciences and is necessary for us to exist in the world at the moment.	W
				'[IOR-power] Yeah, the manifestation of the enactment of power, you've got the potential, so yeah, that's right for the process there must be a level of energy behind this process.	X
				'[IOR-power] So, would you say that this [means] is, this is pressing a switch on this power this potential that is set up, you know I want this to happen now, so I'll press this switch? Because you've got this energy behind it, and you've got these mechanisms.	X
2	Obscurity and temporal contingency of complex power fields renders power states and outcomes indeterminate.	Indeterminacy	**Model** Existing Components *Definition* **And** **Model** *Adjustments*	There's more to a building and people in it. There's more to things than meet the eye and what is actually happening around you.	W
				We basically, we mapped all the interface points we could think of and on the [Company] X side they were about 5 layers deep across things from customer support, procurement, engineering and programmes with almost no, if you looked at it multi-programme, almost no person in X looking over the whole thing until you got to head of procurement or executive committee… and we kept saying how does he, how does he know what they said; because they communicated	Y
				I'm still struggling with the will alter, because you don't know until it happens, you can't be sure but however, whatever, whatever sort of predictions you've made, whatever assumptions you've made, it might not happen the way you expected.	Z
3	IOR-power is omnipresent rendering adopted perspective fundamentally significant.	Omnipresence		I'm seeing pictures now. I always knew that these charts and these whatever you call them are a means to an end, which is to pull together everything, so that once you understand it you can refer to that.	W
				I slightly disagree, in that the suggestion from that is that the inherent power of an organisation changes with context, which you could say, so it becomes the net effect rather than the potential, the net power given a circumstance in a situation as opposed to in isolation, which is fine, I guess. So, rather than measuring the power in an organisation you'd measure the power in each of the relationships.	X
				Yeah again, if you looked at a HR process perhaps there are, where you can have As and Bs, then perhaps there are truly behavioural type things, and even those are outcomes. HR knowing that they want to change somebody's behaviour because they want them to do something different. So, they have a goal and an outcome they're trying to achieve by using the influence...	Y

Table E-9. Core principles unearthed

E.2.5 Explanatory critique reflective notes
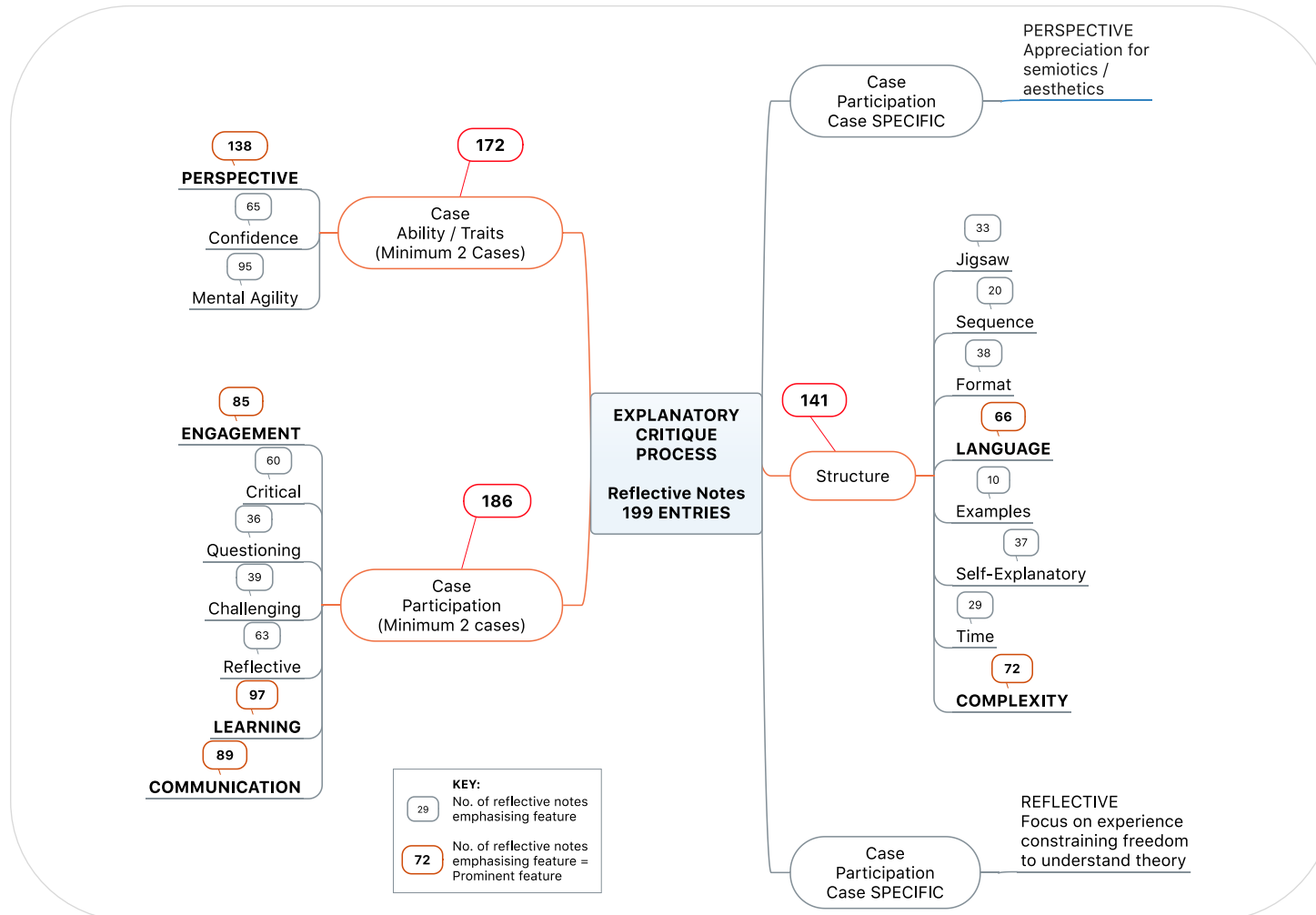
Figure E-1. Synthesised reflective notes reflecting intelligibility factors

E.3 Test case study data coverage details

As depicted in Figure E-2 data gaps were more prevalent in *specific* process descriptions across organisations but comparable.
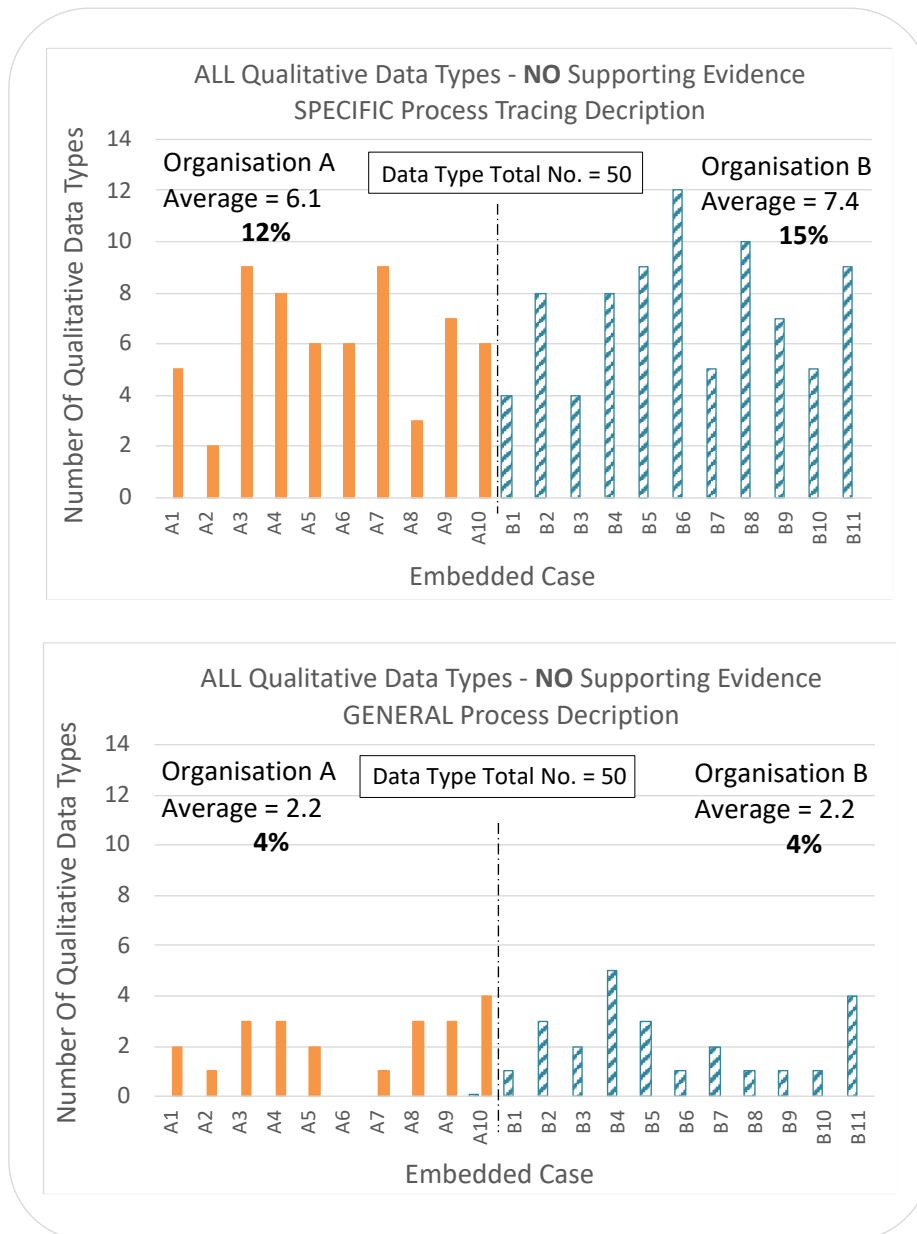
Figure E-2. Specific and general process descriptive data gaps by case

Where a single data gap for a single embedded case mathematically stands as 2% (1/50), general process description gaps were on average 4% (2.3) for Org-A and 4% (2.2) for Org-B. This compared to specific process description gaps of 12% (6.1) and 15% (7.4) respectively. Despite data gaps across process

descriptions, an absence of supporting data for propositions P1 to P10 distilled down on average to 5% for each organisation as shown in Figure E-3 computed at sub-proposition level (Chapter 3, Section 3.10.2). There were no gaps for 4 cases in Org-A and 2 cases in Org-B. The maximum number of gaps in sub-proposition support was 2 (10%).
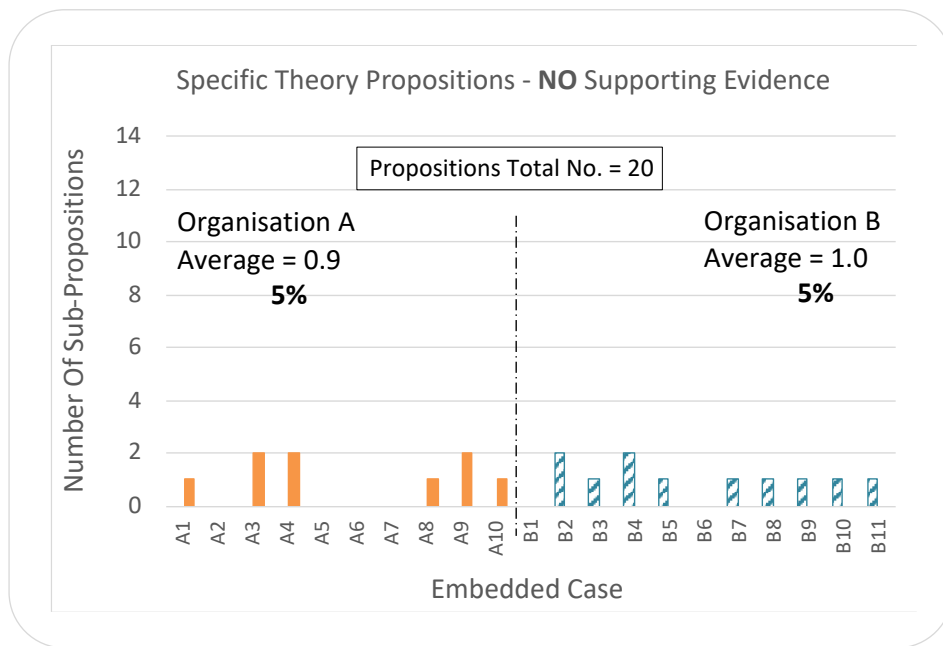
Figure E-3. Specific theory proposition support gaps by case

E.4 Test case study excerpts evidencing theory qualities

E.4.1 Goals (guidance)

	Additional Excerpts	Case
P4a	I don't have a timeframe on that so I guess it **is a goal**, but I **haven't really set out how I'm going to achieve it** yet, I just know that will be my end goal.	A5
	So, as part of the framework management, there's **meant to be regular framework meetings** where we would sit down as a group and discuss all sorts of things. They **don't happen very often**.	B9
	So, **which does he focus on?** Does he focus on developing the **other goals** because this has given him an opportunity to open those doors, or does he focus on **this goal** on the basis that he isn't going to be able to open any of those doors unless this goal is delivered?	B11
	It **still comes down to personal goal** and I think that is part of what a company needs to achieve in the way it deals with its employees, to **make sure that their goals are aligned with the company's goals** and that's what **I try to do with my team**…	B7
	There is **conflict** within the department, but I don't know whether it's the goals conflicting, because they want us to **get as much money as possible**, but they won't give us the money that we **need spend** to **achieve the goal**… So, you need to **speculate** to **accumulate**.	A2
	Yes, I think we probably ended up in an agreement on a **compromise way forward**.	A4
P4b	I think, if I remember rightly, the ultimate **place we ended up** was I gave him somebody for three months, **but we started with** a discount on the fee	B3
	What are they going to get out of it, and for that matter, what are the **risks** associated with the **opposite**, if it **doesn't turn out as they expect** it to?'	A4
	If we **didn't** go down this particular road then **here's what would happen** to the critical path and we would lose this much flow from the programme, or we would be at **danger** of meeting the **other key milestones** on that critical path.	B5

Table E-10. Evidencing specific quality goals

E.4.2 Power effects (evidentiary)

Additional Excerpts	Case
I always try and keep **15 to 30 minutes** when I get in at the start of any day to **look through any emails** that have come in.	A9
So, Person B was aware that we were a little bit quieter and asked me to **set up a supplier portal**. It was well they haven't got time to do it, so I'll do it.	B1
You're constantly **thinking** of **ways** in which you're **going to express** the ways that – not in detail, but you're going to **have to explain**… about how you're going to **write it** in the supporting **information**…	B8
No, I've always my entire life been really **impatient**. I think **everybody** has a little **bit of OCD spectrum** in them. There are **certain things** that I find **I can't function** with. **Queuing in traffic** is an irritant, people that are **late for meetings** I can't cope with very well.	A6
I **backed it up** with my **reasoning** in a calm environment, well I was **being calm**. Not **inside**, I was **flapping like a fish inside**.	B6
We have **dispute meetings** with heads of departments and the senior directors to actually go through the disputes to try and sort the issues out, and with Legal.	B2
Bang, so they've **approved** the painting of the box [metaphorical]. Quite **frankly** then it's **down to us and the supply chain** to go and do all the **due diligence**, setting the **sites** up, working out where's the most environmental place to **get rocks** from, what sort of **cement** works in a sea wall, what's the **environmental impact**, what's the **tidal issues**, how many **sea otters** are stuck in the sea?	A3
We **were all very downhearted** with that last year and we felt, what is the point of this, this is ridiculous. We are a small little team, and we are a **very good little team** actually. The **chemistry**, if that's the right word, of our team at the moment is **really good**.	A2

Table E-11. Evidencing quality power effects

Across process descriptions there were numerous examples of behaviours and as captured in Table E-11 these ranged from individual overt acts such as reviewing emails through to collective acts of due diligence, setting up sites, sourcing and so forth combining together towards completing a project. Equally, covert feelings were identifiable, relevant behaviours such as being impatient or nervous, and shared feelings such as a team being downhearted or having a team chemistry. All were practically connected as the specific excerpt captures:

> 'I can't achieve an X million income from my team, by doing it all myself. If I could, I'd be paid an awful lot more and I wouldn't have a team to have to worry about!   So, I have to make sure that, to achieve that, I look after the team to achieve the task.'   *Case-B7*

E.4.3 Outcomes (broader consequences)

	Additional Excerpts	Case
P1a	There's then the ***tangible project*** outcomes; ***how many*** projects have we got on the go? How many of them are ***on budget***? How many of them are ***on schedule***? How many have been ***delivered successfully***? How many have not been delivered successfully?	B11
	To be honest it supplements them because my ***other goals*** are ***built around delivering*** to our ***end customer***, and so organisation B or whomever, all the ***other organisations*** are all part of that ***delivery machine*** that enables me to achieve that ***outcome*** at the end of it.	A9
	So, Person B is delivering some, being honest, probably some of the ***more complex projects***, more technical particularly from an M&E [mechanical and electrical] perspective. All your upgrades and infrastructure, ***fire-works upgrades, lifts***, so quite technical stuff.	A10
	Yes, well on Location X it's always principally ***heritage, archaeology,*** and ***ecology***. Not just flora and fauna. Yeah, and then another very important consideration is ***transport***.	B8
	'…by their nature are quite ***sensitive projects***, they're actually quite i***nteresting*** because they're actually worthwhile. It's one thing just putting up a shed to store stuff in, and there's actually doing a proper project which ***impacts and supports the defence of the country.***	A7
	It's the ***project delivery framework*** that I'm talking about. I've been working to manage that and integrate it and ***train everyone internally*** to get that working. Yes. It's a ***generic model***, so it's just an Excel spreadsheet but a very, ***very detailed*** one, that you ***pick up a project***, you tick boxes to say ***what you're going to do*** for that project for ***each stage***, that's purpose, roles, interaction and the importance, it's ***top down…*** so that person J can stand in front of the board and the CEO, CFO and say this is where we are, these are our ***estimations*** and this is ***why*** and the why being because we're still at a RIBA 0 or ***still at a stage*** 0,1,2.	A5
P1b	'[influence] It is about ***people's ability*** to i***nfluence an outcome***, it's about people's ability to be able ***to have an impact*** on ***something***. It is about people's ability to have the ***appropriate circle of influence***, so in ***other words*** you've got the ***right people*** that you can ***talk to*** and i***nfluence*** to ***get the outcome that you need***.	A9
	Funnily enough, I was looking at your words, I was thinking ***I've got a lot of influence***, but I ***don't have a lot of power***. I don't have a lot of ***direct power***. I have a lot of ***indirect power through*** the ***ability to*** i***nfluence***. *So, my constraint is it's **not me that's doing** it.*	B11
	I think it would ***mean*** that they were i***nfluential***, ***but*** people ***respected***; there's ***right*** and ***wrong kinds*** of ***powerful***. There's powerful where ***people will just do as they're told*** and ***not necessarily believe*** or ***respect*** it, which I know we all have to do at some point in our lives. But I think the ***most powerful*** people are the people that ***listen*** to everybody around them and make an ***informed decision*** and people respect that and will ***follow***.	B1
	*Well I **suppose power** is the **ability to get somebody to do something because of your position**. So in a **hierarchal relationship** I have a **certain amount** of **power over** the **guys below** me, and **Person B** and **his seniors** have **power over me** because they **can tell me** to go and **do** something and **I've kind of got to go and do it, to a certain degree, within the limits of morality and correctness** and that sort of stuff.*	A7
	Going forward, I see Person T as being ***extremely powerful*** in that relationship. He ***owns the framework*** through which all of ***our work is placed***. He could make a ***decision not to procure*** through that framework if he wished. Do they have ***freedoms to go outside*** of that ***procurement strategy*** that we have put in place*, **given** the following **exceptions,** or subject to the **following approvals?*** I'm totally ***guessing*** at that, but ***it's possible*** that he does have those freedoms, and it's possible that there is a level of governance which goes around that.	B5
	*The **project's powerful** because of **what it can deliver**.*	B6

Table E-12. Evidencing specific quality outcomes

E.4.4 Environment (natural)

	Additional Excerpts	Case
P3a	So, I've got to ***relocate and reconfigure a site*** which means I've got to move a lot of people and they ***don't want to move***. So, there's already a conflict, an interest, and it ***makes things very hard work***. So, I'm having to ***work against*** what the ***population*** want. So, there is a real conflict of interest.	A5
	I mean one of the ***issues*** in our ***industry*** right now is that the ***margins*** are ***so poor*** that you ***can't afford*** to have any ***resource availability***. So, the very nature of that means that we are ***absolutely stretched*** in all directions in order to make the ***smallest of profits***.	B9
	The ***geopolitical piece*** on that ***at the moment*** is, and again reasonably in the public domain, increasing ***military threat*** and an ***espionage threat***. So, a lot of the ***focus*** on things like ***Goal G*** and some of the programmes that we're doing with the organisation E and with organisation F are ***about the broader security and defence*** in light of an ***ongoing changing*** and ***challenging world***.	B4
	On a very ***regular basis***, experienced the ***public***. Yes, yes, it's almost a given, yeah, that they'll be people ***trying to stop you***, yeah. I can't think of a project I've worked on where there's not someone ***positioned to***.	B8
	Anyway, by that point we'd ***let the guardian go***. In the interim the ***local terrors*** had got in and ***smashed everything*** up… not only was it just broken glass, you'd got the ***electricity wasn't safe***, so you had to get the ***electricity board*** in to ***cut everything off***.	A2
	You might be developing a new building and the ***old building*** had ***potential bat roosting areas***, so you ***had to provide a bat box*** which, ***almost universally*** the ***bats ignore*** and go and ***find somewhere else*** after you've ***spent tens of thousands*** on a bat box!	B7
	So, whether it's ***reactively*** if we've got a ***burst water main*** or whether it's planned… we ***dread the winters*** and we ***dread the summers*** because we know what's coming. So, when it ***snowed*** in February/March time last year, we had an enthusiastic team who were all over it. I had ***guys coming in at 3/4 o'clock*** in the ***morning***. Not many, ***freezing cold outside, snow up to their ankles*** and my guys were here ***shovelling snow***, they were gritting the ***roads***, they were making sure ***exits*** were able to be ***opened***.	A1
	There can be a ***delay***, ***weather*** can affect them, and then that has a ***massive knock-on effec***t.	A6
P3b	***Behaviour breeds behaviour*** and that's what ***I try really hard for my team*** as well. We may be having a really rough day because it's really busy, but we'll ***still take five minutes*** to do a ***lap of the office*** and ***get a coffee*** because we just need to take a breather.	B1
	Well in ***putting*** the ***agreement together***, it would be understanding the ***opinions*** of the ***people*** that you're working with. So, well we didn't do it in isolation, we ***involved the key stakeholders*** and ***experts*** to help us decide and get to the ***decision***.	A8
	Organisation B, we have ***volunteer days***, so we'll go and ***help underprivileged children*** or schools, we'll go and ***plant trees***.	B2
	So yes, it will have a ***wider socioeconomic impact*** as well, as will ***job creation*** in Location T.	B4
	There's an opportunity for a tangible result and the fact that it could be an enduring result as well. It could, if secured, could ***change the prosperity*** of that ***part of the country*** for the next 50 years, so the legacy part of that is quite compelling as well.	B5
	If there's ***no heating on site*** and ***they walk off***, then organisation A is going to start getting hit with ***claims of compensation*** for millions of pounds. So, for the sake of spending an extra X now, we get that resilience and business continuity and all that sort of stuff and all those benefits from that.	B10
	… if you're decommissioning a base or moving people, you've ***got contaminations*** that you're dealing with… But there's everything from ***managing asbestos*** to managing ***emissions waste.***	B11

Table E-13. Evidencing specific quality environment

E.4.5 Organised resources (evidentiary)

Additional Excerpts	Case
From a personal level, when one has those **personality tests**, I'm an **ESTJ**. That's **mildly extrovert**, but **scientific**, whatever they all are. By definition, engineers, scientists or whatever do **tend** to **process** and **analyse** information. I **don't tend** to make **decisions** that are based on **intuition** or **gut feel**.	B4
He's **bubbly**. He's **energetic.** He's always on the go	A1
I'm quite **self-analytical** and I **reflect a lot** and I set **high standards** for **myself** but, yes, personally I've had to be quite **strong up here** to say the **right thing to do** is to move away.	B9
I guess just **experience**. It's a little bit difficult because **what we do isn't black and white**, for want of a better word. You can't write down what we do on a piece of paper and expect somebody to go away and do it. You have to have the **knowledge**, the **experience,** and the **ability** to just **communicate well...**	B1
Person B, because of his **gravitas**, the way he came across, the way he **communicated**, his **professional manner**.	A9
Is the reason **he's a CEO**.	A3
But if you don't identify and tell them that, then quite frankly a **designer** is, in **fairness** and quite rightly too, is going to **go for the best possible solution** because that's what they're **trained to** do.	A8
This project when the new person came and **took over the project**.	A5
But no, I think very early on we sat down and again, one of the management tools that they'd used, which I hadn't heard of before, was a **CCM table**, a **counter measure table** which, looking back on it, was almost like a **risk register** or an **assumptions register** but it was just a **slightly different format**.	B10
Yeah, I was asked to advise because in the **spirit of collaboration** we have these **regular meetings** with the end customer and organisation A and myself and Person G, to review the planning strategy and this suddenly came up.	B8
*"In terms of **our symbiosis** we spoke the **same language** and had the same **approach** and used the same **techniques** and, to an extent, the same **methodology**. But we each had **different parts of the puzzle** to bring together.*	B5
I have a very high level of professional pride in our **reputation**	B4
But then **sometimes structure constrains you** when you're trying to **roll out** and utilise what we're now referring to as the project delivery framework, which is something that organisation B has intrinsically helped us with. It's a bumpy road at the moment, we **will get there** but that's new but that's structure.	A10
… that's all about **building relationships**, isn't it? You've spent time with them so you will know whether they're a **report man** or whether they're a **telephone conversation** followed up by a **briefing note man** or whether they're a **big plan** and **coloured pens kind** of a **man, or woman**. By that time you've probably got the **measure of them** anyway, in my experience.	B6
Fortunately, I absolutely **love my job**, and I'm **driven by cash**. I get just as excited by a debt coming in.	B2
We're **not known** for doing **certain specialisms**, we may not even be necessarily known for **having building surveyors**.	B7
I know many people consider me… probably **not perceived** by many to be the **happy-go-lucky chap** from around the corner who's **always joking** and **laughing** and having a **crack**! Nine out ten people would probably consider me to be **quite serious** but there's a **level-headed**, **realistic** side of me.	A10

Table E-14. Evidencing quality organised resources

Similar to power effects, a range of discrete organised resources relating to identity, goals, and endowments were recognised across cases attributed to either the self or person B as embedded individuals or to the organisations as whole entities. Exemplified in Table E-14, at the individual level, some were *innate*, that is given naturally such as personality traits from thinking analytically to being energetic, to integrity and doing the right thing. Others were *acquired*, that is developed / obtained and owned such as gravitas, professional manner, experience, and knowledge. The remaining were *assigned*, that is designated for use notably through role that may be structural such as being a CEO or a designer but equally temporary as in an assigned project responsibility. The distinction between what was innate, acquired, or assigned to organisations and the IOR, although debatable, included risk tools, structures of hierarchy and processes framing working practices, collaborative spirit in areas of the IOR including symbiotic relationships at the inter-personal level, and reputation.

Importantly, evidenced were how organised resources were *generally* valued differently from value attributed to having personal office space, to cash, through to basic behaviours. Some resources, for example building surveyors, had clearly been obscured from being valued, and perceptions were fully recognised as central to evaluation, notably regarding behaviour. Repeatedly it was quality people and effective working relationships that were generally held valued:

'Our currency's our people.' *Case-B6*

'I think I am a great believer in people buy people,' *Case-A9*

Yet, there was clear evidence that such organised resources were not necessarily fixed, if not typically unstable, especially human mental states that can disturb 'normal' behaviour and consequently working relationships unless held in-check:

'… also where I'm at in terms of mood, attitude, that kind of thing because that can have such a big impact on your day-to-day life… [people] may have perceived you in a certain way on a Wednesday when your car had broken down on the way into work *…* I don't know, I try really hard not to.' *Case-B1*

E.4.6 Means (passive, unnecessary)

	Additional Excerpts	Case
P8a	… it's the ***first I've heard of it***, why didn't I hear about it?... It comes out that he has communicated but then ***expected others to pass the message on***… surely, they talk to each other?	A10
	He ***overstepped the mark*** with the contractor… We moved on to other topics because I ***made sure it was moved on***…	A6
	We are rolling out a ***programme of defibrillators*** in ***all of our offices***… It was ***interesting***, the staff ***reaction***… they were ***quite terrified*** by the fact we were doing that.	B3
	But I do care, and I do get upset especially if I've done something to ***upset someone*** as well ***without realising*** that I was upsetting someone.	A2
	I don't think it's an agenda. I think ***people can influence you without realising***. The only reason I say, it's going back to ***my mentor*** who is absolutely my influence. He is my motivation. I look up to him all the time. He ***would influence me*** to do well ***without meaning to.***	A5
	I think we ***didn't resolve*** it to Person T's ***satisfaction***… *It **became a little bit toxic**...*	B9
	… when Person T doesn't want to engage ***for whatever good reason***, he doesn't engage. So therefore the ability to ***move to the next stage*** or step can be ***governed by his freedom to, or desire to engage***	B5
	… we ***didn't ever build that relationship***, and to be honest I ***stopped using organisation B*** for a period.	A6
	So there's a ***fine line between direction and influence I guess*** there but sometimes it doesn't even have to be said. ***Sometimes he'll be talking to someone else*** about something else ***and I'll think*** oh crap, that's ***something I need to be doing.***	B10
P8b	Yes, I ***don't mind autonomy***, that's ***most jobs*** when you ***actually drill down into it***… It's a ***repetitive process*** but the ***actual things*** that you're ***physically doing*** within that process can be ***completely different***.	B1
	My ability to empower them [people] I think is the major influence I have… I'm hoping down the ***chain of command*** people are ***empowering*** their people.	B3
	"… I've been, quite happily ***been given a level of autonomy*** around the way that I have ***constructed this relationship*** and managed this piece of work, achieved the outcome, ***used my judgement*** to develop, establish, ***manage the client relationship***… so there's a ***trust*** which has been given to me which I really respect, but also ***thrive on*** in order to be ***able to do that***.	B5
	But no, I suppose there's a ***fair degree of autonomy***, but ***regimented to a touchpoint*** and say, okay, well I can't just sign off any single contract value. So ***he would have to sign off a certain value***. I wouldn't be looked favourably on if I just gave him something and said, sign it. ***He'd want to know***, okay, how have you gotten to that point? And have you ***followed*** the ***process*** and procedures that we have? So we're ***sort of touching base*** on those key touchpoints, to say, this is ***where I'm at***, this is ***what I'm working on***, this is what I'm doing. So when the time comes that you hand him something and say, sign that… it's ***no surprise***, yes.	A8
	So, that's really what ***I bring to it***, and the knowledge of ***knowing when*** there's a ***technical issue*** to deal with of not answering it myself but ***knowing who to bring in*** who will be able to ***answer it.***	B8
	When this contract was entered into and reported… ***I raised a specific concern***... It's ***something that came from within***. I mean I'm receiving reports… and this is a critical contract… So, ***I asked the question***.	B11
	We ***haven't had*** a ***response*** to it, so we've ***gone to a plan B*** now.	A1

Table E-15. Evidencing specific quality means

E.4.7 Enacted-influence (induces behaviour)

	Additional Excerpts	Case
P2a	So after ***trying to share*** with the ***why***, if I'm ***still not getting the required response***, I'm also able to be ***more directive***. So I think ***everyone would like to be a leader*** who has the ***natural ability*** just to ***get everyone to do*** exactly ***what they want***, Derren Brown type style. ***Sometimes people still are not going to see it*** and at ***that point*** say well actually, ***I'm responsible*** for this, you sit within my team and I'm ***instructing*** you to do it.	B9
	… ***if we don't put something right*** here then we're ***not going to be around*** for very much longer because ***it takes two of you to dance. If one of you stands still, it's not much of a dance***… so… ***how do we put the wrong right?*** … I'll tell you what I'll do, ***this is what I'll do***…"	B3
	Frequently, not necessarily in this role, but in previous roles you ***get halfway through something***, you'd get ***called away*** to do something else then ***when you come back*** from that you sit down at your desk and ***start a new task***, and then you ***suddenly remember you were halfway through something else earlier***.	A2
	The gut feel's an interesting one. You can only have a gut feel if you've experienced it, I suppose, otherwise it's just a guess rather than a gut feel, isn't it? My ***gut feels*** are based on having ***got it right*** previously or ***got it wrong*** previously, I think… ***don't do that!***	B6
	So if it's ***zero completed***, it's going to ***pop up every time*** which ***then springs in my mind*** well ***why haven't we tackled that yet?***	A1
	Again, ***maybe the dynamic*** almost, so if you have got that kind of ***power-hungry person*** in the ***team***, sometimes, ***without meaning to***, you can ***get your back up a little bit*** and you can have that ***negative vibe*** which ***brings on more negative opinions*** maybe.	A5
	… when I think back on things, yes, there ***certainly has been moments*** when ***all of a sudden***, you're ***sitting there*** and ***then think, actually no, I've got it, here's the answer.***	B10
	So, yes, my ***emotions*** can be ***quite accentuated at times*** and it's a ***bit frightening how strong*** they can be, and I have to ***rein them back in***… but there's been a couple of times… when you ***look back*** at it ***rationally*** you think, ***why on earth did I react like*** that because in the ***retelling, the incident is nothing.***	A2
	Okay, that would probably then be the ***example I gave earlier*** for looking at the ***bigger picture*** and accepting that <u>***we will just provide the drawings they want***</u> for this particular project and be ***done with it***. Yes, there was that ***influence brought to bear***, but he probably had a ***fair idea what he was doing*** there anywhere by ***saying***, oh it's ***not going too well***. Clearly, I wasn't there for my health, ***I was there to market*** what we were doing. But yeah, he got his way, and I got my way, so ***we both benefitted.***	B7
	Yeah. So it has our <u>***negotiated T&Cs with Organisation B***</u> to identify the type, the ***standard level of quality*** and ***response*** that we ***expect*** on things. But the ***goal*** is to ***leave a lot*** of it to the ***project-by-project requirements***, because obviously having ***no over-arching commitment*** to say it will ***always take three weeks***, that's ***never always going to happen***. Designing a ***building versus a very small alteration*** is going to be, how ***long's a piece of string***, kind of thing.	A8
P2b	So I just said if you ever think I'm ***not behaving properly*** then please do say because I'm ***not always aware of it myself***.	A2
	… my ***attitude had changed***. I was fully ***aware of it,*** and I knew that I ***needed to do something*** to get me ***back on track***.	A5
	… he had an ***understanding*** of ***what we were doing***, he had the ***dive team on standby*** because of the tank and because we were ***working at height above a five-metre tank***, obviously we still need to have a dive team as a ***safety*** team.	A6
	For me, ***I've been there*** and it's ***really stressful***. So ***what I want*** to do is ***be so on top of the project*** that the challenges that come along are as small as they can be, so I ***never find myself in that situation***.	A7

Table E-16. Evidencing specific quality Enacted-influence

E.4.8 Power sources (evidentiary)

Additional Excerpts	Case
He was an individual that ***didn't believe in building that relationship***, so he ***wouldn't pick the phone up***, or he wouldn't respond, or he'd ***always want a written document***, he ***wouldn't come to site.***	A6
I think when you see an ***agitated customer*** you need to listen and he did, he showed ***empathy*** and didn't try to defend it. ***Don't try and defend the indefensible***.	A3
So ***teams*** deliver everything… ***Skills*** is huge but finding people, not just with the right ***technical skills***… ***people diplomacy*** and ***people skills*** and how you manage and how you have the right conversations in the right way and how you are ***commercial*** about it to make sure that whilst you're still ***being nice to your client***, you're ***actually making some money***.	B3
… the advice you get from Person T, who **knows this environment really well**, will provide you with **huge** amounts of **added value**…	B4
Organisation A's ***core competence*** is ***not*** the ***master planning***.	A4
However much I sometimes get cross at it; we have a ***beautiful in-house recording system*** that you can ***doctor reports*** to give you exactly ***what you need.***	B1
I will continue doing for my new wider team now, is to try and make individuals more responsible for the jobs that they're doing… we have a ***complex system***, so it makes it ***difficult*** to do that.	B7
… systems and ***processes*** are only as good as the ***people*** that run them. They're all ***not perfect***. So some of the reasons that we had got to a place where we weren't doing what they wanted was because that's where their ***processes took us***.	B3
They think we are a ***small company.***	B11

Table E-17. Evidencing quality power sources

Organised resources that held general value across cases covered in Appendix E.4.5, in principle stood as potential power sources, thereafter specific power sources or sinks where there existed specific relevancy of the resources to goal attainment. Attributing specific relevancy to goals was evidenced for a range of organisation resources from natural and adopted behaviour to acquired knowledge and skills, through to systems, processes, and organisation size or scale of operations, as exemplified through selected excerpts in Table E-17. For example, commercial acumen was a recognised power source in respecting clients but also being profitable, whereas lack of availability by phone was a power sink, whilst certain legacy systems were an impediment to empowerment.

Relevancy as a power source or sink, and degrees of relevancy were nonetheless varied and subject to case perspectives and evaluations. On a general level that relevancy might be contested was also recognised, sometimes humorously as in the following excerpt:

'So there's that understanding, whereas sometimes you can phone some accounts departments and they're very abrupt. They obviously shouldn't be doing the job, or they should be, because they're holding onto the money!'

Case-B2

Notwithstanding, honesty and moral principles were prevalent valued human qualities where the individual goal of maintaining such integrity across several cases explicitly usurped other goals:

'I think where I am, is it's a little bit fly-on-the-wall and you might argue it's a little bit disingenuous, but I will not compromise my own integrity in order to achieve a goal.'

Case-A4

E.4.9 Potential-influence (evidentiary)

Additional Excerpts	Case
Obviously, Person B **can't pay** these because there's **no purchase orders**. We shouldn't have invoiced them without a purchase order. [Reciprocal; NEUTRAL]	B2
I **can't help it**; this is the way I work. [Internal POSITIVE or NEGATIVE]	A7
Yeah. It **depends on your level of experience**, you see, because if you've got your expertise and you've got a certain amount of experience under your belt, you can run these projects with a light touch from your programme manager. But if you're, say, a **graduate** or someone younger, obviously you **need more from your direct manager**. So **I'm in that position** where it's a **light touch**, where he can **trust me to deliver** what I need to deliver, and he just light touches it as much that is needed. So that **works well**." [Internal; Reciprocal; Environment; POSITIVE]	A7
… obviously that will be a huge project, a huge project to change all our systems to align with what the business needs going forward, because **sometimes** the **systems** that we've got are a bit **restrictive** for the information. You have to go through too many clicks, shall we say, to **get the information,** and **amalgamating spreadsheets**. [Constrained; Environment; NEGATIVE]	B2
Which, as it happened, occurred almost immediately because he **introduced** me to **his various teams** on site and said, look this is Person Y, if **you want any work done** give him a call and **he'll sort things out for you**. [Elected; Reciprocal; POSITIVE]	B7
I don't care whether it's organisation B, C or D, or whomever to be perfectly honest. I have **no allegiance** to any of **those organisations** at all; it's about the people and having the **trust in the people** that they will **deliver for you**. [Elected; Reciprocal; POSITIVE]	A9
So that was, I think, one of the key **constraints**, was **collaborating sufficiently** to be able to **deploy enough resource** to develop the solutions, which meant we could **get financial analysis carried out**, that would then meet the next phase of approvals. [Constrained; Environment IOR level; NEGATIVE]	B4
I haven't necessarily developed relationships across the board with **organisation B**… I almost **rely on** the **people** that are **working for me** to develop **those relationships**. [Elected Environment; POSITIVE]	A4
I could see where they **wanted to get to**, and I could see it was **going about it the wrong way**. Not through any lack of intelligence, it was just **lack of experience**. That sounds derogatory, I don't mean it to be, but **unless** you've actually sat in a government department and… **understand the process and the governance** and all of that stuff, you're **never going to work your way through that mire** to deliver what you need to deliver when you need to deliver it... I'm **one of the few people** that can speak from bitter experience… **first-hand experience** to **support** a private sector **organisation** to map its way through. [Janus view]	B6

Table E-18. Evidencing quality Potential-influence

Table E-18 captures excerpts indicating power sources that generated constrained or elected, internal or reciprocal dependence, versus environmental dependence. In all recorded instances there was a clear link to having generated Potential-influence, that is a potential to behave in a certain way or take a certain action, that may or may not have become an ability to do so (Actual-influence),

or thereafter to be done (Enacted-influence) subject to prevailing conditions. For example, in the following excerpt the constrained dependence on an embedded external resource foremost was not desirable in that ideally such resource would be internal yet positive in being a productive working relationship. That it was productive had bearing on the duration of the constrained relationship and priority given to acting or not to manage a planned withdrawal of the service:

> 'He's done two years of solid graft and it's working well, as in he's got all that embedded organisation A knowledge, in an ideal world we would have internal staff and not contractors because of the cost but I can't just all of a sudden stop all of Person B's projects. The train isn't going to come into the station all at once.'   *Case-A10*

Constrained dependence was also evidenced as being *reciprocal* as rather more the facts of the situation as in payments due necessitating a corresponding purchase order and *internal* in for example being the way of naturally working as an individual that was not readily adaptable. Elected dependence was equally evidenced at the internal and reciprocal level. There was internal reliance on individual skills and knowledge that provided the potential ability to work relatively autonomously with trust. There was reciprocal reliance on organisation B resources to deliver projects as *trusted* people rather than organisations thereby the potential ability to engage procuring these services.

Environmental dependence and thereby conditioning of Potential-influence within a relationship, such as systems limiting how certain tasks may or may not be completed, and levels of collaboration having negative bearing on timely mobilisation of resources was also clear. Equally environmental conditioning was enabling in the ability to rely on team member relationships across the organisation boundary, and through empowerment where individuals were given the freedom to use their skills.

The subtle but important conceptual move of recognising a state of dependence and then turning to how this dependence may potentially contribute to goal attainment subject to agreement (environment) was emphasised by the final excerpt in Table E-18 where specialist experience was held necessary to obtaining a successful outcome. Moreover, across cases there was clear

evidence of the link between organised resources especially people being valued, the absolute dependence on people to exist as a business, and how this generates strong Potential-influence on management style, approaches, and decisions, that is the Janus view of dependence:

> 'I truly believe without people we haven't got a function, without people organisation A aren't a business. So we are very much about people.'
>
> *Case-A1*

E.4.10 Behavioural resistance (sustainable)

	Additional Excerpts	Case
P7a	It ***wouldn't shift my opinion***, no.	A9
	So I made it very clear that I disagreed, I ***wasn't going to stand by the decision*** or make it my responsibility.	A5
	I think when it gets to that point, the only way you can accept it is because in order to get to your goal of ***delivering the project***, if this person ***won't let it go forward*** without you doing that then you've ***got to do it*** then.	B10
	Can I have him for nothing? The ***answer was no***.	B3
	Okay, so if Person B asked me to take minutes of a meeting, ***I'd refuse***, yes. I would refuse.	A1
	Depends what it was. Anything that ***obviously*** went ***against company policy*** and ***procedure***.	B2
	I'd explain to him that *I **wasn't prepared to do it*** and ***importantly why*** I wasn't prepared to do it, and I would feel comfortable in doing that.	A9
	I'm ***old enough*** and ugly enough to be able to ***stand up*** to that and ***say, no***, that's ***not something I would do***. You'd have to probably report it if it was serious enough.	A7
	I mean if he asked to do something and I'm ***too busy***, I will say, Mate, ***sorry, I'm too busy***.	A8
P7b	It's a ***failure*** of consultancy in that we tend to be ***looking*** to try and ***solve people's problems*** rather than say, ***let's just stop***, this has ***changed***, we need to go back and refer and agree what the next steps are.	B4
	One of our strengths is that we generally ***react to situations positively***. So if we find out about something midway through, we deal with it and ***make it better***. So we're ***open to that***, but what we're ***not open to*** is effectively writing a blank cheque… through ***full and unquestionable admission of guilt*** when there's clearly ***lots of moving parts***.	B9
	What if he ***doesn't want to pay*** that much money? Tell you what, I don't want to work for him either, I'm ***not*** going to ***give my services away***.	B6
	Yes, ***I'll leave***. If it's ***not compatible with me***, if it crosses an ***integrity line***, if it's ***not the right thing*** to do, if it's ***unsafe***.	A3
	Yes, we had a really ***hot summer***, and we had a really ***cold winter***… It causes problems because you can ***never keep everybody happy***. So you'll have one person who's quite happy when they've got a chill to put a cardy on, but for the person sat next to them, that's just not enough.	A1
	I will try and do what anybody has asked ***unless it's beyond my control***, and that's normally a ***time*** thing. They wanted me at Location X this morning, *I **can't be in two places at once***…	A6

Table E-19. Evidencing specific quality behavioural resistance

E.4.11 Motive (negotiated)

	Additional Excerpts	Case
P5a	So over the years we've had to continue to **monitor** that kind of **trust relationship** between the **person asking** and the **person doing** [what]. So Person T, for example, who I referred to earlier, **he asked us to do something** [what] back in February of this year, I think it was February, it may have been longer. He said a PO was coming and **because** it was **Person T**, I **authorised it** [what]. I **got the PO yesterday** [why] having had an invoice on our debtor books for a good six months, seven months. You go well that's really **not very helpful** [how]. You know, the fact is, apart from him feeling a little bit… the only reason **he's raised those POs** [why] is because I've **asked for them** [Overt behaviour]. He wouldn't have, for one moment, thought that our business would suffer in terms of the **cash flow**, the **debtor days** [why] and all the...	B9
	Not really, no. Because **I'm** a really **can-do person** [how; why], and **also** in an **advisory context** one **frequently** [when] is a, **yes**, of course we can do that, in the **customer environment** [what]. Then you **take it away** and **think**, right, no, we're **going to do it** [Covert Behaviour]. So I will, **within reason** [how], unless I think there's going to be **risk** [what] or it's completely outside our core areas of **capability** [what], there'd be **no reason to say no** [how; why]…	B5
	I don't **start the year** until my **business plan's been signed off** by the business [why]. So I will **collate** these are the **requirements** [what] and then I will go to the board to say, this is **what you said you want**, and this is **the cost**, do you want me to **do all that**? Or [how], if you've **only** got **that budget** you need to help me **prioritise** [Overt behaviour]. So **by the 1st of April** [when], when the flag goes down, it's already been prioritised for me. So within the **next 12 months** that lot **needs to be delivered** and it's really **clear** [why].	A3
	Person B **committed** to holding a **meeting** to **answer** it, to which he **invited me** along [Motive]. <u>**I went**</u> along… [Overt Behaviour]"	B11
	I talked about holding the mirror up, where **I've <u>held the mirror up</u>** to **Person B** [Overt Behaviour] to **get them <u>to</u> recognise** that there were **alternative approaches** that could be taken to **achieve** the **goal** [Motive]	A4
	I'll **have to <u>speak</u>** to <u>**my line manager**</u> [Overt Behaviour], '**cause** if I haven't got the time then I have to **make time** by **losing something** else. So the **only person** that can really **make that call** on my behalf is **my line manager**, **because** I **can't just choose** the things that I **don't** want to **work on** [Motive].	A8
P5b	So it's **calculating that risk overall**… There is a **bit of informed decision**. I was going to call it gut instinct but it's not, no. It's an informed decision	B1
	When one is under the **pressure** of many **competing priorities**, that's the **way** that I **apply my judgement**.	B5
	…if it was me, **I'd go with that one** but I'm not at that pay grade. That's what he'll say but he will articulate himself in the right way in terms of **telling us** what we **need to hear** and **allowing me and Person O** to go away and **make that judgement call.**	A1
	But from **my perspective** at the moment, I haven't suffered from their **rates being so low** that I think they're **buying the work**. I **don't think that's the case** at all.	A7
	I just **think** we have got a **mutual respect** for each other and a professional relationship with enables us to **do these things totally subconsciously.**	A10

Table E-20. Evidencing specific quality motive

E.4.12 Actual-influence (contingent, temporal)

	Additional Excerpts	**Case**
P6a	I'll quite **happily change an opinion** if someone gives me a **reason to**, but I think I'm right **at the moment**, in terms of what I've said. I **stand by my advice** to him. I'm **not so bloody-minded** that I **don't change my opinions**, but I've got to have a very good reason to do so…	B6
	There are times where Person C will say okay, understood, **thanks for your views, this is what we're doing**. At that point **I'm sensible enough** to go, **fair enough**.	B9
	… quite frankly a designer is, in fairness and quite rightly too, is **going to go for** the **best possible** solution because that's what **they're trained** to do. But **if you say**, well actually we **can't afford** that, then it allows them to **not look** at the **most expensive** Rolls Royce air conditioner when you say, well actually that one will do.	A8
	The **fact** that we **stopped work** for **six weeks** was clearly a **sign** that it **didn't go my way** at one point, and **I would have liked** very much **just to carry on** going, just kept the momentum going.	B10
	I **can get an enquiry** from say **credit control** or something like that, **not** at the time I'm **looking at the budgets** and **suddenly** you **have to think about** where we are on **this**.	B8
	I was on the motorway heading back home down to Location when **I got the phone call** from them to say **something has just gone bang** downstairs, which actually speeded things up because **I then called everyone** on the group property facilities management side to say look, I'm an hour away from Location but I've just been told…	B10
	I know when I've been **invited to attend** these things, unless there's something I like to do, by the time the **evening comes** and you finish work you think, oh I **wish I hadn't accepted** that. It **seemed** like a **good idea at the time** and then you think, oh I'd much prefer to go home!	B7
	So I was **going to email** him, and obviously then his **out of office** came up saying it was due to **bereavement**, so I've **left it**. I've **got a meeting** with Person T after this meeting to **discuss where we're going** to go with this…	B2
	Structure is good but sometimes it constrains, and it takes a long **time to learn** and **change the mind**. That's why I think it is a **step change** for us because I think it's **changing that mindset** and **that behaviour** of **just getting on** and **doing**…	A10
	So we both **had that job** for **two and a half years**, and then **transformation** came along, and they made us all **redundant**. I survived, thankfully, and **got another role.**	A2
P6b	I **didn't get** a **straight answer**.	B11
	… because **I'm a consultant**, and I'm there to **advise, but** if **someone** wants to **make a decision that cuts through that,** for some other reasons, then of course they **can do**…	B8
	I just **started doing it**, is what actually happened, until **I hit a bit of a hurdle** with the supplier…	B1
	…so **they wanted me** to do **helicopter training**. I'm really bad with **confined spaces**, and you have to be locked in a tank and you're turned upside down in water. **I couldn't do that**. So there will be **times when I say no**, absolutely not, I'm **not doing i**t.	A6
	Whether it's making sure the **grounds** look pretty in summer, the **weather hasn't been too kind** to us this year, so **we haven't been able to** do much.	A1
	I want to walk out having done the best I can. So therefore, **if** I've **done the best I can**, then I **won't let people attack my self-esteem** around what I've delivered, because I've **done the best I can** with the **environment** that I've been **given**.	A7
	… that mentality that when **stuff goes wrong** it is always the supplier's fault… **actually if** we'd done it in a slightly different way… But **hindsight's a wonderful thing**.	A10

Table E-21. Evidencing specific quality Actual-influence

E.4.13 Black box (evidentiary)

Additional Excerpts	Case
…because again, **watching people**, you see these… he's not attacking them obviously, but they **react differently**, the **tenseness starts** being there, and **you could see that**…You can see that in people's **body language.**	A6
…very, very rarely entirely disagree, and **I am open-minded** enough, or my mind is **open to alternatives** all of the time.	A4
It's that **sense of freshness, energy, innovation** from the **client**'s perspective that has been quite a significant enabler because all bets are off, they're speculatively trying to get to their goal	B5
I think it's fairly important and it's good to have that good working relationship with the project manager, 'cause **I do effectively see Person B** as almost **part of** the **organisation A team**.	A8
"… to be honest with you, in this example for Person B and for me, because **we both live and breathe this site** and **we both want to solve it** for the same or for similar reasons.	B6
Once you've done it a couple of times, it's almost a **cut and paste type job** the next time round, you've just got to tailor it to a particular project. **80%** of it is **pretty much standard template** stuff but you just have to put a bit of **thought into** the other **20%**. [Recognising Patterns]	B10
So a lot of it is generic, and it's all to do with relationships and **building relationships** and **trust** and **respect**.	B2
I accept the maxim that the **customer is always right**, maybe misguided or whatever, but in his mind what he wants is what he wants. I think one just has to try to look at it from their perspective sometimes and things appeared to him to be going wrong.	B7
I think when you've ever had a grumpy customer, you've got to let them get it off their chest and go and do something about it. You've got to then **earn the right to then take the conversation further**	A3
So I don't live my life in pigeon boxes. It's not like the old Royal Mail sorting office where you had boxes and you kept different things… So how do you **take this whole experience** because I think some people do live their lives in pigeon-holes, and I think they lose because they have to become some kind of multiple personality or schizophrenic. Why don't you just **be yourself** and bring the joy of being yourself to whatever you're doing?	B3
I never go on personal levels when I'm at work. I'm very much **work is work**. I **don't do personal life**.	A5
My **attitudes** and **opinions** in everything that I do has all been **shaped by my parents** bringing me up, that nature versus nurture, all that kind of stuff. But **ultimately**, because of **that mindset**, it made me want to join the army. The **army encourages** that. There's a **motto** for Sandhurst, which is the army officer training place, which is **serve to lead**… you've actually got to **bring your people with you and you're actually serving them.**	B10

Table E-22. Evidencing quality black box

Table E-22 summarily captures excerpts indicating types of basic perceptions and mental stances that underpinned the forming of motives. Basic perceptions were formed through making sense of observed events and people including the self was clear from sensing tensions, open-mindedness, freshness, energy, and innovative mindsets to the nature and quality of relationships including shared purpose or otherwise. Patterns were also discerned in processes such as project information requirements and for example in the behaviour styles associated with roles:

And therefore, this is unusual to say about someone in commercial, but I don't feel there's such a guard that is often applied to people in those types of roles.   *Case-B9*

Generalised mental stances were held from business being all about building relationships, trust, and respect, to maxims of the customer is always right albeit qualified through more specific views. It was recognised that customer perceptions may be misguided but also that when the customer feels justifiably dissatisfied, a supplier needs to earn the right to take the relationship forward. Not all opinions were fully shared on the details of such matters or necessarily on others such as whether it is better for individuals to compartmentalise their work and private life, or not, or possibly to what extent and in what manner. As the last excerpt in Table E-22 captures, childhood fostered attitudes and opinions aligned to a military career engrained with the ethos of 'serve to lead' and retained clear and positive relevance to work life generally. Conversely, discrete personal events affecting mood negatively may also be relevant even viewed to impact working relationships if allowed to permeate into working life, as noted in Appendix E.4.5.

A further example of a mental stance standing as a judgement not necessarily understood or shared, pertained to what projects *are* and what projects *entail* pointing to the relevancy of the theory under test. Idiosyncratic people and people management were judged central to projects in the same manner people are held to lie at the heart of power and performance:

'It's all interaction. Because at the end of the day a project is simply people, that's what it is. A project is managing people delivering various services, to achieve the end goal. It's not running machines like in a factory. It's actually running people to deliver, and therefore, because you're managing humans, they're so variable, you have to understand humans and work with humans to deliver the project. That's what people don't necessarily see.'
                                                                                                    Case-A7

Perceptions and mental stances that underpinned the forming of motive were evident in selected excerpts provided in Chapter 5, Section 5.4.4.7, and Appendix E.4.11, such as relevancy of a relationship of trust and being a can-do person. A further example demonstrates how the *principle* that work delivered regardless of

amount should be paid for, having noted outstanding invoices, *contributed* to forming motive to pursue payment:

> We have invoices, they're not of great value, but it's not the point. We have work that we've delivered that we've not been paid for, so I'm now trying to contact Person U to say, do you realise how old these are?   *Case-B2*

E.4.14 Feedback / Feedforward (evidentiary)

Additional Excerpts	Case
I think I had to accept that I could well have been being defensive because if I had three different people telling me I was being defensive, then I was probably being a bit defensive. So I accepted that. Then I **<u>reflected</u>** [BLACK BOX] on ***what I had initially come to organisation A to do*** [Organised Resources A; **Goals A**] and the ***reasons why*** [Potential-influence A; **Motive A**] and that was it really. BLACK BOX { **Motive A** → **Goals A** }	A1
But yes, the bigger we get, the more difficult it is and so what then becomes critical is that the people who sit round your senior table have the same values and behaviours that you have. They need to **<u>model</u>** [Means A; Motive B] **your behaviour**. **Means A** → **Motive B**	B3
I suppose he, along with the team, he put in place, designed our project framework [Outcome A-B] which is the process by which we run our projects now. That has definitely changed how we work [Organised Resources A*; **Motive A***]. **Outcome A-B** ⇨ **Motive A***	A9
At the moment, I think there's ***a team working*** [Organised Resources B] on ***Goal G*** [Goals B] that ***thinks*** that it's ***trying to head*** in the ***right direction*** but ***isn't quite clear*** on what the ***direction*** [Motive B; Effects B ^{N}; Outcome B] is. **Organised Resources B** ← **Goal B**	A4
I mean ***things do change***. What I tended to find in this thing was *I* [B] ***got to the point*** where I ***thought I'd resolved something*** [Outcome B] and then ***another obstacle*** would ***appear***… Stop ***moving the goal posts*** [Goals B2] I think would be the phrase. **Outcome B** ← **Goal B2**	B10

Table E-23. Evidencing quality feedback / feedforward

Exemplars of feedforward / feedback relations presented in Table E-23 are more fully exposed in S-Appendix FR3-A1. All use the nomenclature A and B in accordance with the specific tailored model employed to capture each A and B power-to and/or power-over process. Tailored models orient the process to reflect a predominantly power-to or power-over process being accorded to parties A and B reflecting more closely the perspective described. Thus, A and B do not necessarily correspond with organisation A and organisation B respectively. A* or B* is also employed to formally reflect each organisation as a whole, when salient. Superscript ^{N} is further used to formally signify multiples, such as behaviours (effects) and so forth, when significant.

Discrete *feedforward* relations were discernible between process components. The first selected excerpt in Table E-23 points to one such interrelation in a power-to sense when Case-A1 reflected and recalled the *motive* that had driven a specific personal *goal*. Annotated in the same manner is the following excerpt

where in a joint power-to sense both *organisations* were considered to hold the same strategic and corporate *goals*:

> 'The two organisations in this enterprise [Organised Resources A-B], I'm sure at a strategic and corporate level, for Goal G are entirely aligned [Goals A-B] and see that this is a hugely important relationship.'

<div align="center">

Organised Resources A-B ➡ **Goals A-B**   *Case-B4*

</div>

Discrete feedforward relationships were also evident reflecting power-over/under processes in terms of inducing the behaviour of others as the second excerpt in Table E-23 points in modelling behaviour. Performing a specific behaviour served as means to induce a motive in *others* to behave in the same manner somewhat aligning to the view expressed that behaviour breeds behaviour (Chapter 5, Section 5.4.4.3; Appendix E.4.4, Case-B1). The following is a further example where a demand constituted the means to trigger forming a motive by *another*:

> 'So he said to me, how do you want to go about this [Means B]? I said, well I'll tell you what [Motive A], do a URD, give me all the facts and the reasons and the rhymes, give me the cost, send that over to me and we'll pass that on. So we did, we passed it on'.

<div align="center">

Means B ➡ **Motive A**   *Case-A1*

</div>

Both examples are recognisable as direct *inter*-connected feedforward given in reality Means and Motive each relate to separate but connected process. In the above example foremost Means relates to B thereafter Motive relates to A. Notwithstanding, the process may also be construed as feedback, where B's Means moreover triggers A's behaviour to *formulate* a response (A Black Box; A Effects), thereafter A's motive to propose a way forward (Motive A).

Feedforward was most prevalent in connections between events and outcomes as provided in the third selected excerpt in Table E-23 where an *outcome* of a project fed forward to become an organisation wide formal process and strategy or *motive* for the process to be followed. This form of feedforward first captured the significance of power-points whereby the newly developed process was a means to an end, not an end in itself. Second, how it was intelligible to translate the process model to the organisation level (A*). Third and correspondingly, how process model full extension was recognisable *horizontally* and *longitudinally* by

each *individual* completing linked actions over time toward milestones and closing project gates, collectively and *vertically*. The following exemplifies one such feedforward where a team meeting outcome of agreed allocated actions fed forward as specific goals of individuals:

> 'We [A] sat down and the CE manager there got this table out and started writing things up himself into it. But the outcome from that [Outcome A] was a whole bunch of actions that we agreed around the table and clearly, some of them came to me [Goals B] and it was all allocated to certain people.'

<p align="center">**Outcome A** ⇨ **Goals B**   *Cas-B10*</p>

Discrete *feedback* relations were also discernible for example first in how cited goals were embraced by individuals and teams thereby driving the forming of motives and behaviour as given by the fourth excerpt in Table E-23 specifically related to Goal G. In the following example, this type of feedback was evidenced in a thinking process during a meeting that exposed several types of prominent Potential-influences towards goal attainment, including contractor capability:

> '… it's about making sure they can do the job we [Organises Resources A] want them to do for the money they're saying, and for the quality and standard [Goals A].'

<p align="center">**Organised Resources A** ⟵ **Goals A**   *Case-A6*</p>

Second, and distinct from horizontal or vertical extension across different discrete inter-connected processes, feedback occurred between outcomes and goals for example because of learning or possibly shifting goals such as in the fifth excerpt provided in Table E-23. Not only were goals altered there was also discernible feedback to behavioural resistance. This type of feedback was also apparent where *potential* outcomes conflicted with goals of one the parties concerned (B1 versus B) that ideally was to be resolved amongst the parties, but if not reconcilable would then be escalated appropriately, a process reflecting a specific type of vertical extension:

> 'It would feedback up [Environment B1], yeah. There's a level of expectation that, try to solve your own problem to start off with [Goal A/B; Outcome A/B1] and if it needs to be escalated, it needs to be escalated, because ideally a phone call will hopefully solve the issue.'

<p align="center">**Outcome A/B1** ⟵ **Goal A/B** {Effectiveness Ob – Gb}   *Case-A8*</p>

E.4.15 Influence (emergent process)

	Additional Excerpts	Case
P9a	What I find ***fascinating*** is ***why do I like hearing about it from*** Person ***X***, but I ***don't*** like hearing about it from Person ***Y***, I don't know either of them. It's really interesting, ***I don't know why!*** [SELF]	A2
	I think predominantly it's my call but ***I'm probably feeling that way for good reason***. [SELF]	B9
	I assume that was the ***reason***, I hope that was the reason, not that they're not interested! ***Maybe*** they're ***not*** interested. [OTHER]	B7
	We ***haven't maybe*** completely ***resolved this***… if it really ***becomes*** a ***serious issue*** that we need to obtain legal advice because it's quite fundamental here. [OTHER]	B8
	There are ***times*** when I do ***live in ignorance***, talking about mushrooms, I'm kept in the dark and fed manure. There's a point where sometimes you think you ***may never understand why*** you have to do something but generally speaking, if I am ***in that position I say why***. If someone said it doesn't matter, get on with it, so be it but people are ***normally*** quite happy to ***tell you*** the reason why you're doing things. But as I say, it hasn't happened that often because ***most of the time*** it's quite ***obvious or apparent what*** I'm trying to do and ***why.*** [SELF and OTHER]	B10
	People always ***think*** I'm a crotchety grouchy… and they blamed that partly on the relationship that I didn't form with this other chap, but ***it wasn't that***. [SELF and OTHER]	A6
	I have asked the question of people who have been involved since the beginning, and I don't think I've had a consistent answer, let's put it that way, but I would support your articulation there, so ***maybe that intent has changed*** in the three-year period. . [OTHER]	A4
	Because the management of the comms group and the ***wider stakeholder*** comms has been an area that he's looked after, but ***I haven't really been exposed to***. He's been able to bring in a dimension of, and here's ***what everybody else thinks***, which helps to either enrich and therefore ***support*** a particular ***view*** or ***knock it down***. [SELF and OTHER]	B5
P9b	Just little things, ***behaviours on site***, really ***irritate you*** because you're like you really ***wouldn't do that at home, don't do that*** on my site.	A2
	So it ***delayed*** it by a week, and it was very ***frustrating***… actually the ***impact*** of the week's delay was I then had to go back to the boiler ***manufacturer*** and say I know you've got ***everything booked*** to come over from [Country} on this date but I've ***got to push it back*** a week because ***we can't take them.***	B10
	I think we've ***had scenarios*** previously where some of the ***designers*** have gone off and ***given*** you the ***gold standard*** when ***bronze will do*** kind of thing.	A8
	… there are times when the ***partnering bit falls down*** or ***somebody lets you down***. You're ***always going to get that***, but I suppose it's how you respond to that.	A6
	At the ***end of the day***, if you've got ***pressures*** on to ***deliver work***, and it could be that you've got ***milestones*** that are ***imposed by the project***, by the client, and they're ***struggling*** to meet the timelines and then we're struggling to. ***We might need their time*** and effort into ***resolving something else*** that for us would, say, turn a payment round on time, but ***their priorities*** would be to ***deliver for a client***, and ***we appreciate*** that, and ***they appreciate*** that we need the ***cash in***. It's this ***fine balance*** between the two.	B2
	Because ***at the time*** it was a ***great idea*** but whoever the ***architect*** was ***didn't speak*** to a ***facilities manager***, that's what I say!"	A1
	I think there's a ***team*** of people who put the ***financial side*** of things together and another ***team who deliver*** and I ***don't necessarily think*** that there's ***a link there***.	A5

Table E-24. Evidencing specific quality influence

E.4.16 Power (indeterminate process)

	Additional Excerpts	Case
P10a	Person B then has **cancelled** the subsequent **meetings** that we've arranged.	B3
	… he **refused to respond** to phone calls from me or emails, and I **expect responses**… It just gets **complicated at times**, but I was trying to please a customer**.**	B7
	I was **interested to see** the **way** his senior people… **reacted** when they had a problem.	A3
	That is a very hard question to answer. **I like to think** if that were to happen, we'd get to a position where **we'd have a chat with each other** and let's **work together** to understand.	A8
	it goes back to **that culture** of, in a **military construct**, it's the old, if I tell you to jump, **I'll tell you how high to jump**, whereas in a **civilian world** you might actually say, well, I'm **not sure I want to jump** in the first place.	B4
	Then it's all in a **melting pot** and you have to work out which is the **best contractor** for the best **price** and the best **programme**. Then I would say to you, well actually, having looked at what they've all submitted, **I recommend** this is the best contractor to go with, all in. **And then do you go with that?**	A7
	Oh it went on and on and on, and it was **to-ing and fro-ing** between. He, I think he understands that **I really did my best** to get this working because we wanted **to achieve what they wanted** to do but it **just didn't work in the end**.	B7
	I must admit **my colleagues thought** it was **going to fall apart** the day **before completion**, but you could still hope, and **it did**.	A2
	When that project **had its challenges**, and it did have its challenges, and **we had things go wrong**.	A10
	Yeah, and in the **instant, we had**, you can argue it both ways about **why we've ended up with**… a bit of this was wrong, **we did something wrong**, **you did something**… That happens.	A3
P10b	You could probably say we're about to enter into a **third generation of approach**, the previous two would have **had turbulence** also. So it feels like you're **clinging on with your fingernails** and then **something changes**…	B9
	We've not mentioned **security**, but security for us is a **massive, massive restriction** on major building projects. On our sites, especially the X location sites, a **non-Country passport holder can't work on our sites**.	A6
	You're **constantly managing assumptions** and **risks** out, to try and deliver what you're trying to deliver… you **could assume** that the **customer isn't going to change his mind**.	A7
	There will be **indirect feedback** from some of our **supply partners** who are bigger than we are, who **may aspire** to **dislodge us** from that position.	B11
	None of our **steel** is manufactured in this country anymore, it's all China or it's all **made abroad**. Again, the **price goes up**.	A6
	I'd just started at Organisation B then, but being in the credit management business, that **had a big effect** across my life anyway, because obviously it makes the **job harder**. A lot of **companies** went into **liquidation, into receivership, administration.**	B2
	So, it could be as little as my **blind's broken**, to we've had incidences where people have put [something] down **toilets** and **blocked** the **water mains**, blocked the drains. My guys are then having to deal with that really thankless, nasty task.	A3

Table E-25. Evidencing specific quality influence

E.5 Test case study excerpts evidencing theory intelligibility

E.5.1 Interpretation factors

	Additional Excerpts	Case
Govern	I think using the word governs, I also react to a little bit, because I don't think that influence is about governing people's behaviour, it's about modifying or moderating people's behaviour.	*A4*
	I'm just struggling with the governing bit, but I think I understand it.	B9
	Because with influence, I think there are more things than someone influencing you that governs an individual's behaviour. So their own goals, desires, requirements, would personally tend to influence me more than someone else influencing. I just think there's more on the other side that would outweigh the influencing.	A8
	How I interpret power is not something that I believe governs outcomes at all… exceptional people do exceptional things some of the time but not all the time.	A10
Process	Power is the process that governs outcomes. I'm just trying to understand because in my mind I'm thinking that it's how individuals behave that delivers an outcome ultimately. If you're influencing people, how they behave, then influence them delivers the outcome but yes, I suppose power would be... I'm less certain about that one.	B10
	So, is it the process that governs outcome or is the delivery of [the outcome] or is it the outcome that arises as a result of the influence?	B11
	Don't you think that's a reasonable summary of a lot of what we've said? That's describing what I do and many others, I think… Yes, so you could combine the two [processes]... No, this is just complicating it unnecessarily but what I do, can possibly influence outcomes, but it certainly doesn't – that's just changing your words isn't it? I can't govern an outcome.	B8
Confidence	'I think I get it. It's taken a while, I'm really sorry… I just don't want to misjudge the question…I think I understand what we were talking about, and the power has probably gathered all the influence in the process of the individual and the behaviours of both companies.	B1

Table E-26. Additional extracts evidencing interpretation factors

E.5.2 Emotive factors

	Additional Excerpts	Case
Effectiveness	So influence is one of the processes that governs behaviour. I'd have to say, I think the emphasis needs to be on influence rather than power, because influence creates a partnership environment and a wellbeing partnership, working together environment, whereas power can be more detrimental. I think my opinion is that both those things exist as processes to achieve both behaviours and outcomes, and not one. Yeah. I think an influence is a soft way of getting behaviours right and outcomes, and power is the hard way of getting the behaviour right and outcomes. That would be my view.	A7
	Well that's the ultimate goal presumably on particular projects… Yes, because there obviously needs to be a certain amount, a lot of technical knowledge and ability to co-ordinate teams and get co-operation flowing between teams that don't normally work together and that's where the influence comes in. I see the power more as the stick to beat you up with if it's not working any other way.	A2
Abuse / Misuse	So in terms of what we've been doing here under the MWEs have very much influenced by his power, for want of a better word, as CEO to steer that in a particular way… I don't like the word power… I don't know, it just feels wrong… It doesn't feel collaborative it feels dictatorial.	A10
Core Values	So I'd say, especially with the framework side, it's being as open and as honest as possible, even if that is identifying this is how much we have to spend on it.	A9
	I try to achieve the goals by embracing people rather than mandating people. Therefore, whilst I probably do have power, I don't think k I abuse it.	B9

Table E-27. Additional extracts evidencing emotive factors

E.5.3 Actual intelligibility gaps

	Additional Excerpts	Case
Influence integral	I suppose I would expect that governance leads to outcomes so I would almost put outcomes at the end, as another section to that [influence]. But you've got me, I'm doing 14 different answers in my head because it's quite a conundrum!	B3
	I think influence would be the very subtle use of the many types of power that there are, financial, position, knowledge, whatever. Let's say knowledge perhaps, and then further down the scale a list of influence, you've got the more persuasive ways of doing things. So I suppose you've got power, influence, persuasion, in that order. Persuasion is the one I like to use because it's the subtlest by far and people are happy to do what you want them to do, they don't feel obliged in any way with influence, or forced with power, they take on your targets, your own objectives as theirs, because you have persuaded them to do that by whatever subtle means. So they know I suppose that, if they accept the subtle persuasion to do something they don't want to do, it will be to their benefit.	B7
Influence Continuum	A lot too, for me, depends on whether we're talking about formal power or informal power, so not everybody that has a badge that says leader - is a leader. The informal structures in a business are actually sometimes more powerful than the formal structures. Why? because people follow people. The definition of a leader is somebody who people follow, not necessarily the chief executive officer or big cheese badge.	B3
Broader Outcomes	I would say this one is around seven or eight, this one is around probably five. Less for the power. Yeah, and sometimes that [power] gives you a bad outcome because people aren't bought into it.	A9

Table E-28. Additional extracts evidencing actual intelligibility gaps

E.6 Excerpts evidencing IOR-power significance

E.6.1 Role, value, and distribution

	Additional Excerpts	Case
Outcomes	Clearly if you have no means of applying the influence that I think of as power, it...it can't be really considered to be power because at the end of the day there is a **consequence** of power, or **power is** that you **reach** an **output** and if you don't have the capability to use it then you don't achieve your output.	Case B (ES)
	That he had the **power** and the control to do what he wanted really, virtually… If he didn't **get an outcome**, got his own way, he'd failed.	Case W (CS)
	I suppose ultimately, if you want to get into a massive philosophical discussion about it, **money** is a **manmade** conceptual thing anyway. **What real value does it have?** In the event of a **nuclear war**, what relevance would it have then? Clearly, there are individuals who have not had money who have been able to wield power but yes, I think materialistically, **ultimately,** it's such a **huge factor** within **having power** that it would be **naive** to say that you can **ignore it.**	Case B10 (TS)
Role	...influence, power, strength, the strength of the company, it could be financial [being] in a position of strength or position of power, your strength in the negotiation and I think here I'm **mixing up strength and influence to create power**.	Case A (ES)
	I did say **power is influence** because it affects the behaviour. It isn't, **isn't influence in itself,** which is what I was trying to explain before but power as we've reached this point here [PM; effects] has affected the behaviour, it does have a **strong behavioural factor**.	Case W (CS)
	So, **who's got the power?** Well it's always the **person that's above you** who's got the power in a **hierarchal organisation**. But that **doesn't mean they're influential**, because I might not respect them, I might not think they have the experience, I might not think what their instructions are, are correct. For me, an **influence is there's no instruction** there or being told to do something, it's kind of, I'm **trying to find the words** for it… I **could choose not** to **take that instruction** and **therefore his power** would **cease to exist**, because I would choose not to… It **doesn't mean** you **can't challenge** it.	Case A7 (TS)
Value	Certainly, in my experience I have **seen power** very much **misused** but **also well used**, in my opinion.	Case C (ES
	There **should be a productive use of power**, so a purpose plus result from use of it. But **abuse** of power does occur, and that's when you're **using** it for reasons that are **not readily aligned** with achieving a **result** that is **desirable or beneficial**. So, people can use power in ways that are possibly not particularly, in my opinion appropriate.	Case Y (CS)
	So if you're **using power** in a process to govern an outcome with me, this is just me personally, **even if I want to** do it and **I fee**l that it's the **wrong sort of power** coming across, **I won't do it**.	Case A3 (TS)
Distribution	If we were on an **equal footing** it would be **good**, but as we are **not** on an **equal footing** it's **not a positive partnership**… Many of the **large suppliers** have got **significant power**.	Case D (ES)
	I've forgotten what the word now is when you you're a 100% linked up with a company. Is it **chronically linked**? So, X [aero company] were linked to Y [aero company] because all they did was linked to Y. So, to get themselves away from that **weak position**, they bought Z [Aero company], which gave them a lot of D's [aero company] work and suddenly they, so they've **looked to restore** [independence; **power balance**].	Case X (CS)
	That's where I go back to, if you've got a strategic **collaborative** relationship, or you've got a… a transactional relationship is the one I've just described, and what you'd much **rather have** is a **balanced relationship** where you **could say, actually, no**, all of what you've said is very important, but **in this instance** you really need to **think a bit more** about the **advice** we're **providing**, and then maybe go away and think about it.	Case B4 (TS)

Table E-29. Role, value, and distribution of IOR-power for practitioners

E.6.2 Performance

	Additional Excerpts	Case
Efficiency / Effectiveness	We had a very **weak bargaining situation** because we needed a network and we needed it now...That was a **successful** partnership... we avoided the investment.... they were able to make **more efficient use** of the **transportation** that they had.	Case A (ES)
	If this was a powerful **American** operative's CEO and he takes over a **British business,** then there may be some **resistance** based on how people react to **language**… and there's **all sorts of factors** that might **erode** his **ability** to **influence** people... Yes, **even though** he may be **somebody very effective**… Well you're recognising that rather than hiding it and this [Sources] being varying, that [VR] captures that **variance** doesn't it, you have to be… you **need to be aware** of it.	Case X (CS)
	I mean when I have **performance issues** within the team, the **question** I always ask either myself or the line managers or the person responsible is **have we done everything** enough to **allow** that person to have **done it better**. If there's even a whiff of no in there… we should manage it, to what can we do differently to help them be more successful. So it's doing everything we possibly can to do it in a way that is **engaging** and **motivating** and **enthusing** as a style. Then **at some point** you have to **put your foot down** and say now you have to respect this. I am asking you to do it because **I'm responsible** for this.	Case B9 (TS)
	…you **have to accept the fact** that there are **so many external influences**. The **weather is one** in the construction industry. Yes, you **can forecast** the weather and you **can have contingencies** but that's the **key word, contingencies**. It's having **backup plans**.	Case B10 (TS)
Empowerment	I've seen some **dreadful** examples where the person doing the **negotiating** had not, did **not have the authority**.	Case A (ES)
	Day to day in the **operational** phase… [Company] Y are a lot **more efficient** at making their teams **operate** as an **individual** than [Company] X, **within** the context of the **structure**… and X has got too many variables, too many organisations, too little internal communication to ensure consistent deployment of individual behaviour.	Case Y (CS)
	Delegation of responsibility, empowerment to deliver, I did mention that, but I think without that, if you're working in a community, and I've had it before with a previous manager in an old job, if you're **micromanaged**, you've just got **no motivation** because everything you do, you need a bit of a cuddle to keep it going. You need that yes, that's right, no, that's wrong… It **doesn't help to develop you**. It doesn't help to give you the **confidence** to be **independent**. They very much say go off, do it, **you're empowered** to deliver, **shout if you need help**, which is great.	Case A5 (TS)
	You do **feel empowered**. I guess that goes back to the **not being apprehensive** about picking the **phone** up to **somebody**.	Case B1 (TS)
	So in that respect, I'll say not a three, because **if you haven't got influence** in a situation then **you have no empowerment**, because you just might as well sit in the corner and not say anything. So I'm going to change my scoring, but I still only think to a seven.	Case A6 (TS)
Learning	My **perception** of power **was** that **negative [coercive] power is bad** and positive [consensus] power is good. The broader context [all circumstances] suggests that that **isn't probably correct**, and actually that there are situations where negative [coercive] power is **actually necessary** and therefore **probably good**.	Case B (ES)
	You know **power**, it **struck me** as being a very **strange topic** to take up. Now I, **now I can see why** it is very interesting and I can see how it [theory] could be used [lens] in **industry**, in **schools**, it **could be very useful**.	Case W (CS)
	But you **never hear** the **power** of this person **helped global warming**. It's **always** the power of this person is **damaging** this and damaging that. It's always really negative, which is why I think **when I was describing it and I listened to myself**, I was like, **but power isn't always negative**.	Case B1 (TS)

Table E-30. IOR-power and performance relationship for practitioners

E.7 Fuzzy set Qualitative Comparative Analysis (fsQCA)

E.7.1 Confirmatory Study

Analysis of case secondary conditions: male traits, female traits, deference, understanding IORs, and understanding of natural power, generally indicated conditions although independently sufficient, to be largely trivial or irrelevant in explaining levels of agreement (convergence). For example, as shown in Figure E-4 across all theory qualities for which there was strong agreement (1) (convergence), female traits as a condition displayed low relevance and contradicted the condition being necessary for agreement (quadrant A case), and whilst understanding natural power indicated this to be sufficient and borderline necessary (quadrant A borderline case), given distance from the diagonal rather tentatively suggested low relevance.
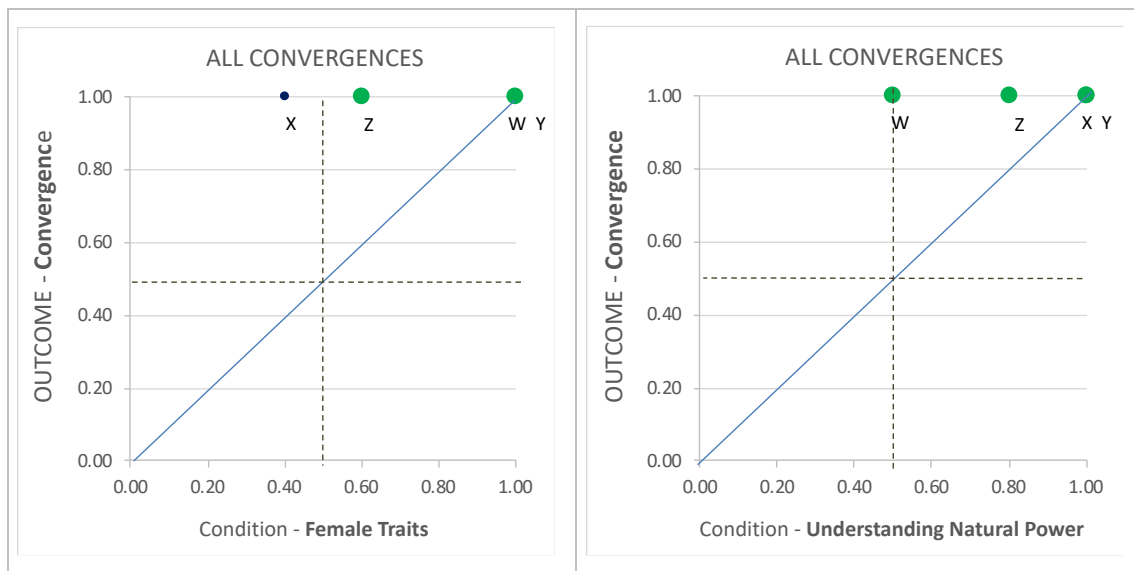
Figure E-4. Relevancy of case conditions to theory agreement

Analysis of theory disagreements displayed similar relevancy albeit as shown in Figure E-5, exemplified first by relevancy of male traits to disagreeing with component process, thereafter, understanding IORs to disagreeing with attribute assumptions, conditions were necessary but not sufficient to explain disagreements and again indicated low relevance given distance from the diagonal.
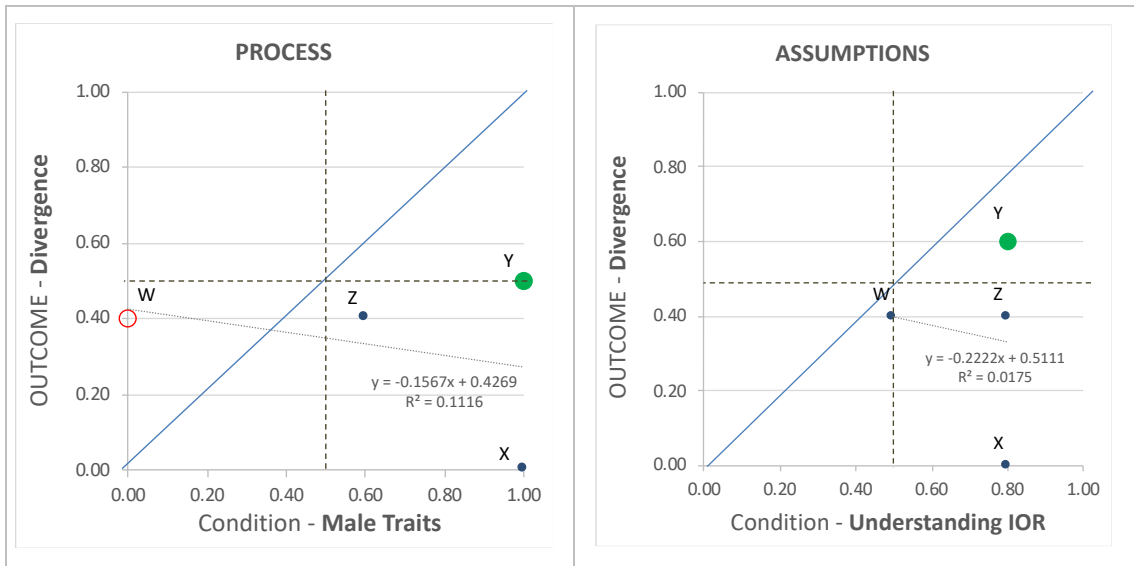
Figure E-5. Relevancy of case conditions to theory agreement

Similar N-S graphs and summary conclusions for case condition relevancy across all attributes and components are exposed in S-Appendix FR2-A.

E.7.2 Test Case Study

Analysis 1 – Perceived intelligibility

The profile of perceived (raw) intelligibility accorded by cases to the succinct influence and power definitions offered are given in Chapter 5, Section 5.4.5. Profiles traced by influence are provided in S-Appendix FR3-A2.

Indicated by Figure E-6 and qualified through necessary and sufficiency (N-S) analyses shown in Figure E-7 was no *clear* relationship between according agreement to power and influence based on case accorded scores. Intelligibility of influence was necessary (0.952) but not sufficient to according intelligibility to power, and conversely according intelligibility to power was sufficient (0.952) but not necessary to according intelligibility to influence given contradictory cases (Appendix C.7.1 Figure E-7; quadrants A and C). Corresponding computed indicative *coverage* values in both cases (0.773) were also clearly above the threshold adopted (0.5). Notwithstanding, the relationship between *disagreeing* with power (divergence) to agreeing with influence was also sufficient (0.952) but not necessary (0.539) and disagreeing with influence was further sufficient (0.893) but not necessary (0.588) to disagreeing with power. These partly asymmetrical findings suggested more than one explanation for relationships may exist and qualitative analysis surfaced in more detail how and why.
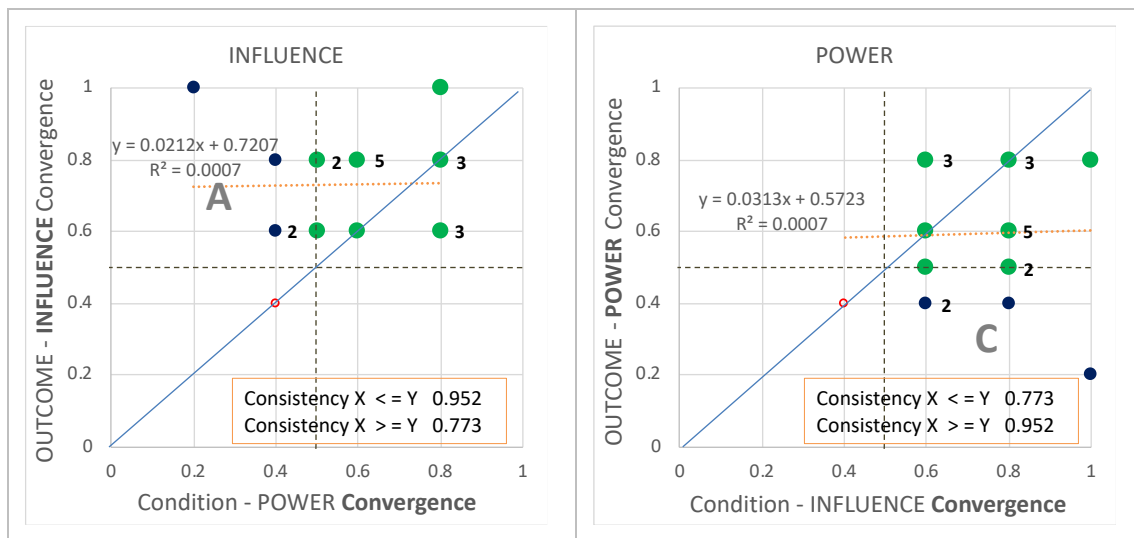

Figure E-6. Power-influence perceived agreement relationship X-Y plots

Necessity and sufficiency (N-S)

Necessity-sufficiency (N-S) analyses based on **X-Y plots** of case *secondary* conditions, grouped as core values (generation) and evaluation process (reflection time; gender) components in the theoretical model under test (Appendix C.7.3; Figure C-7), *independently* were found irrelevant (and/or trivial) to agreeing with either influence or power. Thereafter, *primary* case conditions representing experience were found independently sufficient but not necessary to agreeing with influence whilst neither sufficient nor necessary, if not irrelevant to agreeing with power. Excerpts from the full N-S analyses data provided in S-Appendix FR3-A2 are displayed in Figure E-7 showing how condition prior reflection time (RTime) was found independently irrelevant contrasted with commercial role (COM) found sufficient but not necessary for agreement to influence. These X-Y plots exemplify analytical distinctions drawn using this method where contradictory cases were held salient and as will be seen how this contrasted with findings based on *consistency levels.*
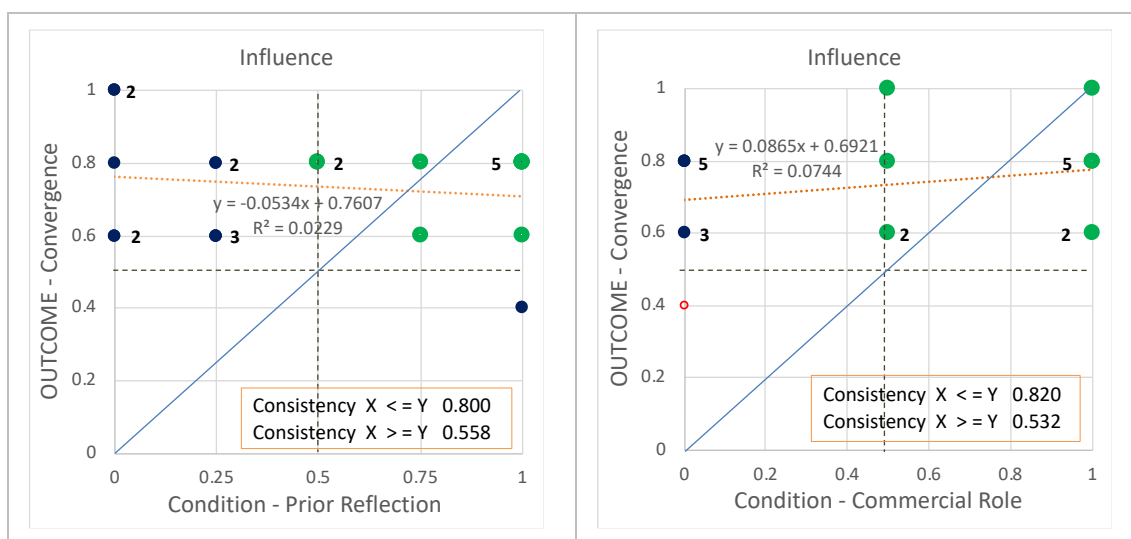

Figure E-7. Exemplary condition X-Y plots for influence intelligibility

In terms of conjunctural causation (Appendix C.7.1) the 13 combinations of primary and secondary conditions (Appendix C.7.3; stage 4; c1-c13) explored using logical AND (lowest condition score by case) did not support any conjunctural causation. Thereafter logical OR relationships (c4-c13) that

excluded core values (c1-c3) given these were not only irrelevant but had contradicted the posited theory, did support a causal relationship between experiential conditions jointly and influence definition agreement, with or without inclusion of evaluation conditions, but not power definition agreement. Agreement or not with power in *addition* to primary experiential conditions had marginal relevance to influence agreement.

N-S analyses based on computed **consistency values** offered a different interpretation of causal relationships whereby in addition to primary experiential conditions, reflection time (RTime) and being of generation X (GenX) were also independently sufficient conditions but not necessary to agreement with influence whilst remaining neither sufficient nor necessary to agreeing with power. As shown in Figure E-7, levels of prior reflection time had a consistency level of 0.8 that satisfied the threshold for sufficiency (0.8), and the indicator of coverage (0.558) satisfied the coverage threshold (0.5). Importantly, membership of generation X (born 1965-1979) had been theorised to lead to divergence rather than convergence and other generations (Gen Y, Gen BB) were not sufficient conditions. The theoretical basis of core values had been further undermined.

In terms of conjunctural causation for the same 13 combinations of primary and secondary conditions (c1-c13; c4-c13), patterns for computed consistency levels followed that of the X-Y plots for influence. All primary conditions jointly satisfied thresholds for necessity (0.981) and were borderline sufficient (0.795) under logical OR relationships. Inclusion of secondary evaluation conditions (gender; reflection time) increased necessity level (1.00), but marginally reduced sufficiency to (0.770). Agreement or not with power in *addition* had marginal relevance. The main difference was that the same relationships were found for power although with lower consistency values, for example for primary conditions jointly, necessity was 0.960 and sufficiency 0.632 for agreement with power.

In summary the findings of the analyses based on X-Y plots are captured as a revised model M2p in Figure E-8 contrasting with summary findings based on consistency thresholds shown as model M3p in Figure E-9.
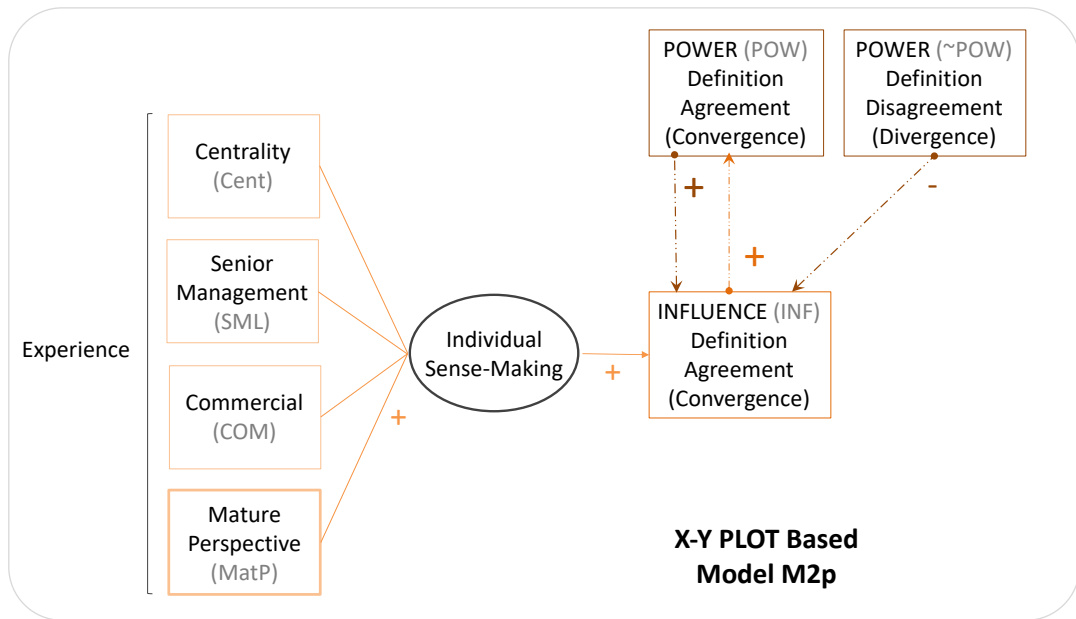
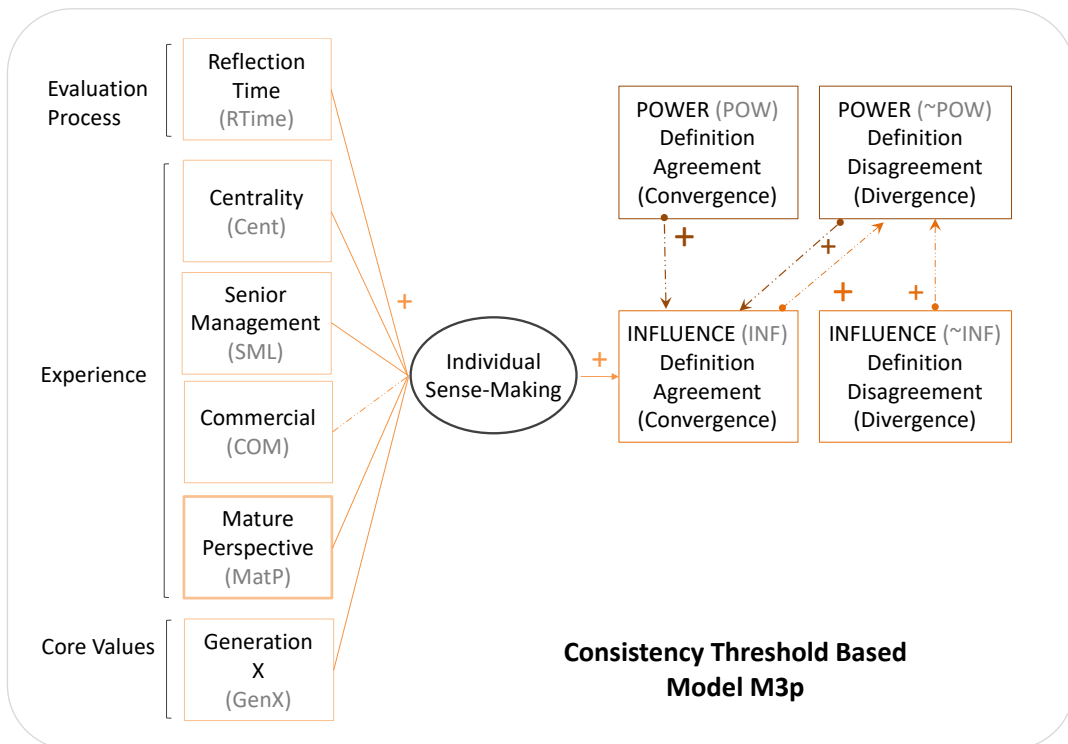**Figure E-8. Model M2p X-Y plot based causal relationships**

Figure E-9. Model M3p consistency based causal relationships

Each model represents the most parsimonious model capturing primary and secondary conditions that were found *independently sufficient* albeit not necessary but thereafter *jointly* sufficient and necessary to generate agreement with influence and/or power. In model M3p experiential condition commercial

(COM) was the weakest primary condition independently (consistency 0.820; coverage 0.532) reflected through a dotted line connection to individual sense-making. Notably both analyses suggested conditions were not causally related to power intelligibility but the relationship *between* power and influence had bearing.

Qualitative comparative analysis (fsQCA)

Theoretical model M1p (Appendix C.7.3; Figure C-7) and model M3p (Figure E-9) were used to conduct fsQCA analyses to test fourteen condition configurations (Appendix C.7.3; stage 4; C1-C14). Model M2p constituted a sub-set of Model M3p and Model M1p, covered by configurations C2 and C9 in both. Each model (M1p and M3p) thereafter set the assumed causal relationships between each condition and each outcome, that is agreement with influence definition and agreement with power. The distinction between models lay primarily in the assumed causal relationships of reflection time and core values.

Although representing a more complete analyses, the findings were consistent with the N-S analyses model M2p. Only two plausible condition configurations leading to agreement with *influence* were *complex* configurations C2 and C9 as shown in Table E-31 both consisting of only primary (experiential) conditions with configuration C9 also including agreement with power as a condition. Both configurations constituted descriptive solutions given there were no parsimonious solutions that yielded core conditions nor intermediate solutions. Overall solution C2 that excluded power agreement as a condition was a better solution than configuration C9 in terms of diversity, respectively 31.25% versus 18.75% and solution coverage 0.799 versus 0.604. Configuration C9 yielded only a marginally higher level of consistency of 0.984 versus 0.957. Based on raw and unique coverage for each sub-solution or pathway (S1, S2, S3) contributing to the overall solution, role centrality and not being in a commercial role accompanied by a mature perspective was the most relevant when excluding views on power. When including views on power, a commercial role rather than a central role accompanied by a mature perspective was most relevant.

	Model M1p (RAW data)													
	INFLUENCE Definition Agreement						POWER Definition Agreement							
	C2 Complex			C9 Complex			C2				C9			
							Complex		Intermediate		Complex		Intermediate	
	S1	S2	S3	S1	S2	S3	S1	S2	S1	S2	S1	S2	S1	S2
Centrality (Cent)	⊗	⊗	(●)	⊗	⊗	●	(●)	⊗		(●)	(●)	⊗		(●)
Senior Management (SML)	⊗				⊗	⊗		⊗				⊗		
Commercial (COM)	●	●	⊗	●	●	⊗	⊗	●	●		⊗	●	●	
Mature Perspective (MatP)		●	●	●		●	●	(⊗)	(⊗)	●	●	(⊗)	(⊗)	●
Influence (INF)	-	-	-	-	-	-	-	-	-	-	■	■	■	■
Power (POW)	-	-	-	-	●	●	-	-	-	-	-	-	-	-
Number of Cases	3	5	6	5	2	1	6	1	2	9	6	1	2	9
Total Cases	12			7			7		11		7		11	
Raw Coverage	0.205	0.377	0.416	0.377	0.162	0.208	0.448	0.136	0.304	0.584	0.448	0.136	0.304	0.584
Unique Coverage	0.019	0.179	0.403	0.234	0.195	0.208	0.448	0.136	0.112	0.392	0.448	0.136	0.112	0.392
Consistency	0.9	1	0.97	1	0.943	1	0.848	1	0.95	0.869	0.875	1	0.95	0.89
% Diversity	31.25%			18.75%			31.25%		31.25%		15.63%		15.63%	
Overall Solution Consistency	0.957			0.984			0.880		0.870		0.901		0.888	
Overall Solution Coverage	0.799			0.604			0.584		0.696		0.584		0.696	

⊙ = core causal condition present   ⊠ = core causal condition absent   ■ = necessary condition present
● = complimentary causal condition present   ⊗ = complimentary causal condition absent   - = condition not in configuration

Table E-31. Model M1p plausible configurations leading to perceived intelligibility

286

Turning to plausible configurations leading to agreement to power based on model M1p (M3p model not relevant), although again only configurations C2 and C9 satisfied solution thresholds (consistency > 0.8; coverage > 0.5), a different but common underlying pattern emerged. In both configurations a *borderline* parsimonious solution (consistency 0.777; coverage 0.8) was found when rounded to one decimal place (consistency 0.8). If accepted, central role and not having a mature perspective were each *core* causal conditions to agreement with power. This translated in configuration *intermediate* sub-solutions to one dominant pathway to agreement, that of central role with a mature perspective (S2), and another pathway of commercial role *without* a mature perspective (S1). As noted in the N-S analyses and reflected in Table E-31, agreement with influence was a *necessary* albeit not sufficient condition to agreement with power and inclusion as a causal condition had a negligible positive impact on *solution* consistency (0.888 versus 0.870), no impact on coverage (0.696), and rather a negative impact on diversity (15.63% versus 31.25%).

Across solutions for influence and power intelligibility, senior management role was the only condition either not integral to a pathway or contributed through its absence rather than presence. This was an interesting finding given commercial role was the weakest *independent* condition based on consistency and coverage as reflected in Figure E-9, and was contrary to the theorised causal relationship.

Diversity levels generally however were low noting ideally the level would be greater than 75% (Appendix C.7.1; steps 4 and 8). In addition, corresponding solution X-Y plots revealed significant over-determination across solutions, readily transparent in solution C2. As shown in Figure E-10, cases A2, B1, and B2 each clearly contributed to more than one sub-solution or pathway given condition scores exceeded 1. This solution also revealed 9 cases that proportionally contributed to the overall solution but were irrelevant/trivial in each pathway, of which two cases (A4; A8) through summation *across* pathways appear on the X-Y plot as good cases. In accordance with Table E-31, the number of good cases supporting each sub-solution S1, S2, and S3 was only 3, 5, and 6 respectively.

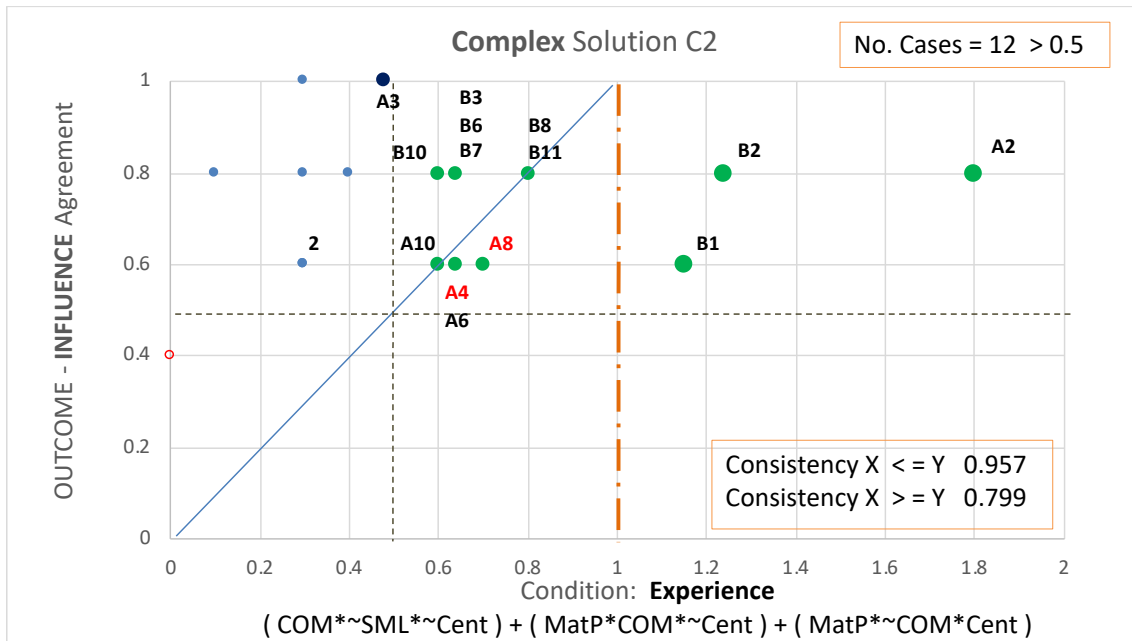All solution and sub-solution plots are provided in S-Appendix FR3-A2.

Figure E-10. Model M1p – Influence complex solution C2 (X-Y plot)

Thus, although overall solution consistency and convergence levels appeared reasonably strong and were confirmed non-asymmetric, solutions were based on a small number of good empirical cases, largely driven by causal *assumptions*, representing highly tentative findings.
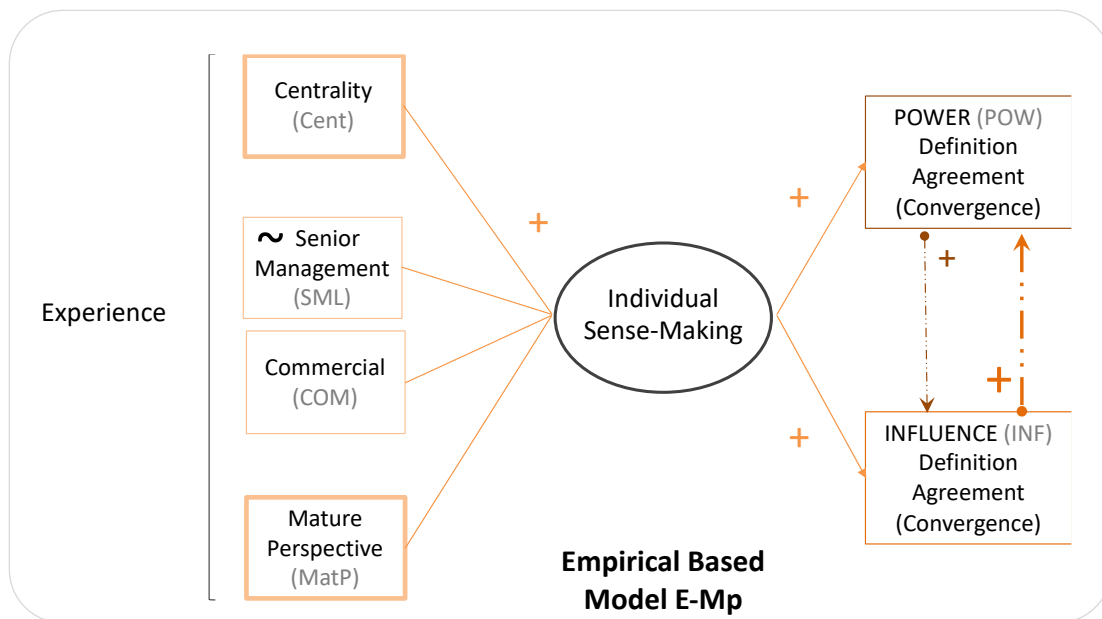

Figure E-11. Model E-Mp – Perceived intelligibility tentative causal conditions

Notwithstanding, although models M1p and M3p were thus not fully supported, the findings overall translated into a plausible empirically grounded model E-Mp shown in Figure E-11, where all primary conditions (role centrality, mature perspective, commercial role, and senior management) are jointly relevant to intelligibility of power and influence. Intelligibility of power thereafter further contributes to intelligibility of influence, and conversely intelligibility of influence is necessary to intelligibility of power.

Analysis 2 – Actual intelligibility

The profile of actual (adjusted) intelligibility accorded by cases to the succinct influence and power definitions offered are given in Chapter 5, Section 5.4.7. Profiles traced by influence are provided in S-Appendix FR3-A2.

Indicated by the reported profiles and qualified through necessary and sufficiency (N-S) analyses shown in Figure E-12 was an implied relationship between according agreement to power and influence based on case actual scores. Intelligibility of influence was necessary (1.0) and sufficient (0.920) to according intelligibility to power, and conversely according intelligibility to power was sufficient (1.0) and necessary (0.920) to according intelligibility to influence with no contradictory cases (Appendix C.7.1 Figure C-4; quadrants A and C).
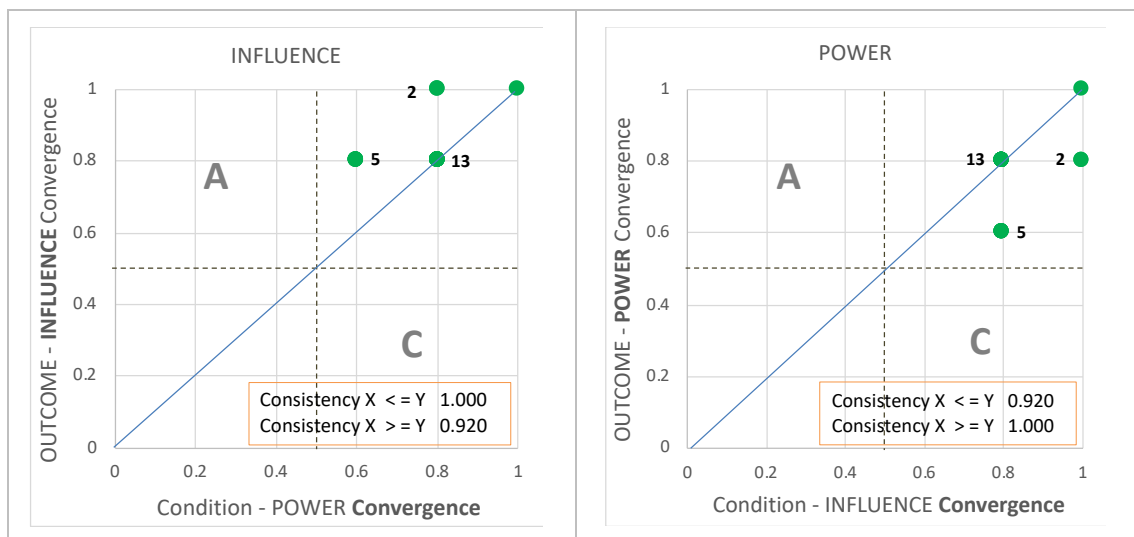

Figure E-12. Power-influence actual agreement relationship X-Y plots

Necessity and sufficiency (N-S)

Revised necessity-sufficiency (N-S) analyses based on **X-Y plots** of case *secondary* conditions based on actual intelligibility largely followed patterns of perceived intelligibility in that core values (generation) and gender (evaluation process) conditions *independently* were each found irrelevant (and/or trivial) to agreeing with either influence or power. Evaluation process condition reflection time (RTime) however was found sufficient albeit not necessary for intelligibility of both definitions. Thereafter, *primary* case conditions representing experience also followed the pattern of perceived intelligibility in remaining independently sufficient but not necessary to agreeing with influence. In contrast however, based on actual intelligibility the same causal relationships were also found for agreeing with power.

In terms of conjunctural causation the patterns fully followed perceived intelligibility for the 13 combinations of primary and secondary conditions using logical AND (lowest condition score by case) in not supporting any conjunctural causation. Thereafter, logical OR relationships (c4-c13) that excluded core values (c1-c3) for the same reasons, retained full support for a causal relationship between experiential conditions jointly and influence definition agreement, with or without inclusion of evaluation conditions, but again differently based on actual rather than perceived intelligibility, for power also. Agreement or not with power and influence in *addition* to primary experiential conditions although relevant across more cases were still marginal respectively to intelligibility levels.

N-S analyses based on computed **consistency values** offered a different interpretation of causal relationships both in relation to X-Y plot findings, and in relation to perceived intelligibility (analysis 1). Consistent with analysis 1, in addition to primary experiential conditions, reflection time (RTime) and being of generation X (GenX) were independently sufficient conditions but not necessary to agreement with influence. Contrasting with analysis 1, the same causal relationships were also found for actual power intelligibility. Notwithstanding, condition commercial standing as one of the four experiential conditions no longer was a sufficient nor necessary based on coverage (0.483) that emerged below

the threshold (0.5) although satisfied (0.84) the consistency threshold (0.8) for influence. For power, commercial role neither met consistency (0.78) nor coverage (0.488) thresholds. The theoretical basis generally underpinning core values had again been undermined.

In terms of conjunctural causation for the same 13 combinations of primary and secondary conditions (c1-c13; c4-c13), patterns for computed consistency levels followed that of the X-Y plots for influence. All primary experiential conditions including commercial role jointly satisfied thresholds for necessity (0.977) and were sufficient (0.850) under logical OR relationships. Inclusion of secondary evaluation conditions (gender; reflection time) marginally decreased necessity level (0.943), but marginally increased sufficiency (0.863). Agreement or not with power in *addition* had marginal relevance. Similarly for power, primary experiential conditions jointly satisfied thresholds for necessity (0.983) and were sufficient (0.790) although borderline under logical OR relationships. Inclusion of secondary evaluation conditions marginally decreased necessity level (0.963), but marginally increased sufficiency (0.811). Agreement or not with influence in *addition* again had marginal relevance.

In summary the findings of the analyses based on X-Y plots are captured as a revised model M2a in Figure E-13 contrasting with summary findings based on consistency thresholds, model M3a shown in Figure E-14. Each model again represents the most parsimonious model capturing primary conditions that were found *independently* sufficient albeit not necessary but thereafter *jointly* sufficient and necessary to generate agreement with influence and power. Notably both models expose a mirrored causal relationship between conditions and intelligibility that logically reflects the relationship *between* power and influence being necessary and sufficient in both directions (Figure E-12).
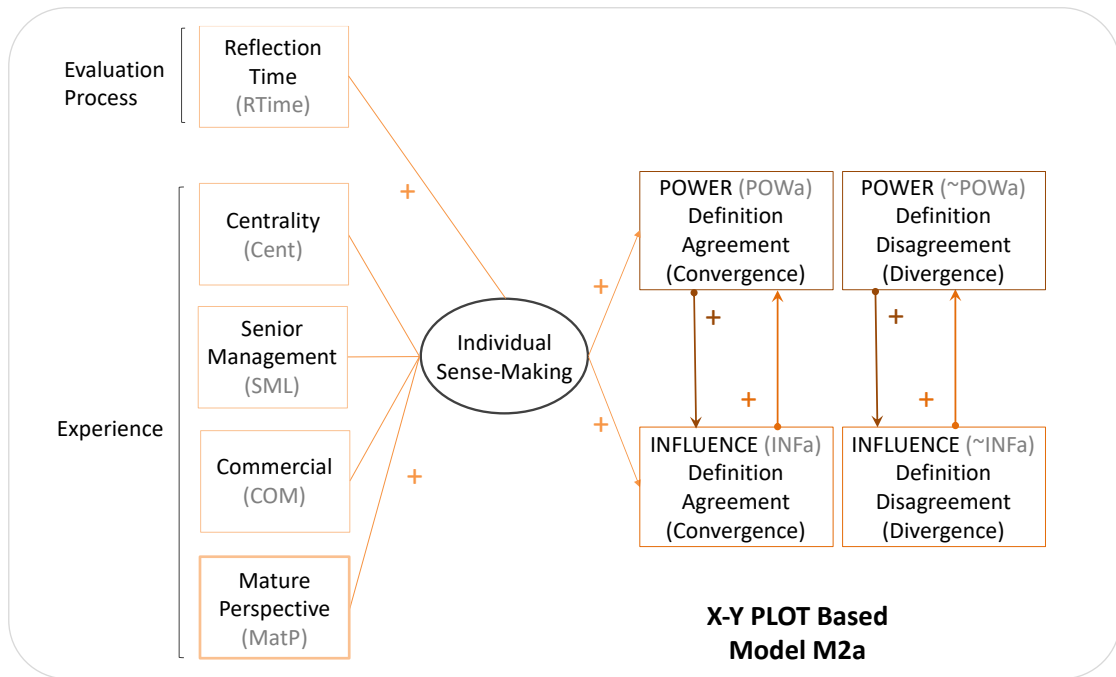
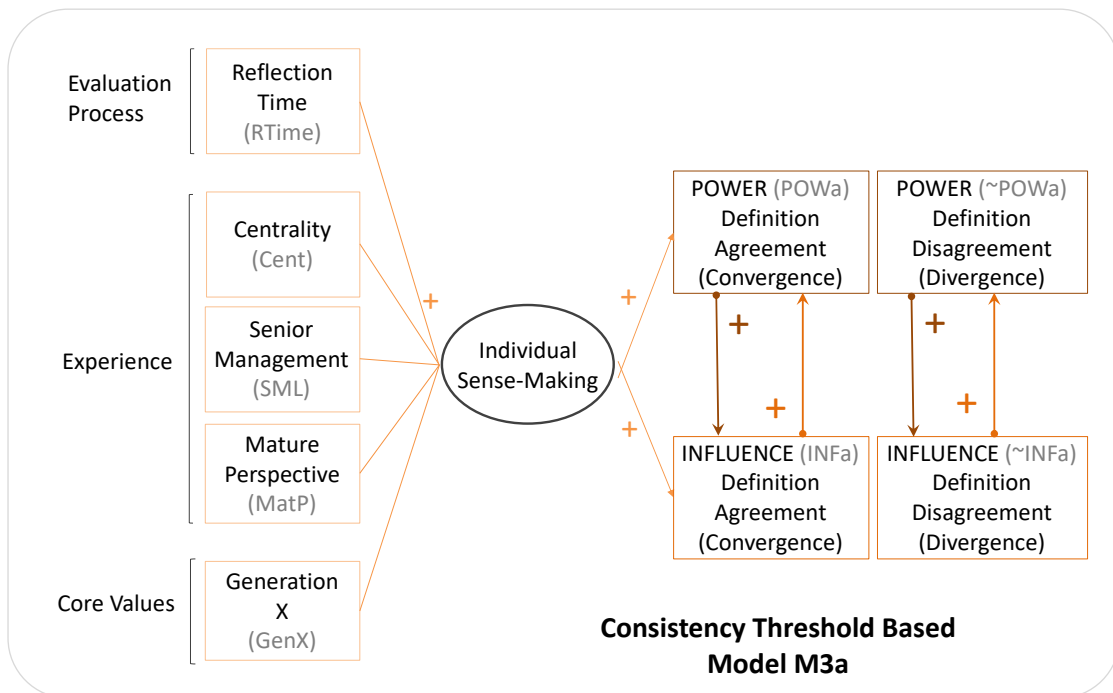**Figure E-13. Model M2a X-Y plot based causal relationships**

Figure E-14. Model M3a consistency based causal relationships

292

Qualitative comparative analysis (fsQCA)

Theoretical models, M1a (Appendix C.7.3; Figure C-7) and M3a (Figure E-14) were used to conduct fsQCA analysis 2, to test the same fourteen configurations as analysis 1 (C1-C14). Where model M2p had constituted a sub-set of model M3p and in turn Model M1p for *perceived* intelligibility, this was not the case for *actual* intelligibility. Model M2a stood as an independent X-Y plot-based model of causal relationships. Following analysis 1, models M1a and M3a set different assumed causal relationships between different sets of conditions and each outcome (definition intelligibility).

The findings based on model M1a were consistent with the findings for *perceived* intelligibility in being provided by configurations C2 and C9, as shown in Table E-32. Nonetheless there were substantive solution differences. Configuration solutions were now identical with no intermediate or parsimonious solutions distinguishing agreement of power from that of influence. Furthermore, as highlighted in Table E-32, inclusion of power and influence agreement as a condition respectively in configuration C9, no longer generated a change in pathway S3 through inclusion of condition, absence of senior management (~SML), that had been the case for perceived intelligibility of influence (Table E-31). As necessary *and* sufficient conditions (Figure E-12) when included, there was no apparent relevance to complementary causal conditions as configuration C10 shows. In principle, configuration solution C2 stood as a plausible causal configuration solution leading either first to agreement with influence thereafter power or vice versa, or to intelligibility of both contemporaneously.

Across solutions C2 and C9, levels of consistency, coverage, diversity, and over-determination followed the pattern and were comparable with perceived intelligibility findings. Tentative empirical model, E-Mp shown in Figure E-11 thus remained the overall findings for actual intelligibility based on Model M1a, the difference being however that conditions, centrality (Cent) and mature perspective (MatP), were no longer core conditions, and the model is thereby a descriptive empirical model (complex solutions only).

	Model M1a (ADJUSTED Data)													
	INFLUENCE Definition Agreement							POWER Definition Agreement						
	C2 Complex			C9 Complex			C10	C2 Complex			C9 Complex			C10
	S1	S2	S3	S1	S2	S3	S	S1	S2	S3	S1	S2	S3	S
Centrality (Cent)	⊗	⊗	●	⊗	⊗	●	-	⊗	⊗	●	⊗	⊗	●	-
Senior Management (SML)	⊗			⊗			-	⊗			⊗			-
Commercial (COM)	●	●	⊗	●	●	⊗	-	●	●	⊗	●	●	⊗	-
Mature Perspective (MatP)		●	●		●	●	-		●	●		●	●	-
Reflection Time (RTime)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Female (FEM)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Influence (INFa)	-	-	-	-	-	-	-	-	-	-	■	■	■	■
Power (POWa)	-	-	-	■	■	■	■	-	-	-	-	-	-	-
Number of Cases	3	5	6	3	5	6	20	3	5	6	3	5	6	20
Total Cases	12			12			20	12			12			20
Raw Coverage	0.190	0.333	0.379	0.170	0.310	0.379	0.920	0.184	0.338	0.413	0.184	0.338	0.413	1
Unique Coverage	0.026	0.158	0.368	0.026	0.155	0.368	0.920	0.028	0.169	0.400	0.028	0.169	0.400	1
Consistency	0.943	1	1	1	1	1	1	0.843	0.931	1	0.894	0.931	1	0.920
% Diversity	31.25%			15.63%%			50%	31.25%			15.63%			50%
Overall Solution Consistency	0.984			1			1	0.942			0.957			0.920
Overall Solution Coverage	0.727			0.695			0.920	0.756			0.756			1

⊙ = core causal condition present   ⊗ (boxed) = core causal condition absent   ■ = necessary condition present

● = complimentary causal condition present   ⊗ = complimentary causal condition absent   - = condition not in configuration

Table E-32. Model M1a plausible configurations leading to actual intelligibility

Turning to model M3a based on assumptions grounded in computed consistency values rather than pure theory (M1a), alternative plausible configurations, C5, C6, C9, C12, and C13 were found as depicted in Table E-33 for *power* intelligibility. Configurations C5, C6, and C9 although yielding intermediate solutions did not offer parsimonious solutions rather alternative pathways generated by simplification of one pathway from the complex solution. In each case simplification was given through absence of conditions as depicted in Table E-33 for solution C9, and solution C5 embedded in configuration C12 as follows.

For configuration C9, noting this configuration included condition influence intelligibility, a necessary and sufficient condition, pathway S2 consisting of the absence of centrality (Cent) and of senior management role (SML) became independent pathways (S1 and S2). For configuration C5 that did not include influence intelligibility as a condition, it was condition reflection time (RTime) that underpinned generating similar independent pathways for the absence of the same conditions (Cent, SML). For configuration C6, pathway S3 consisting of four absent conditions, centrality (Cent), senior management role (SML), mature perspective (MatP), and generation X (GenX), became the intermediate solution as four independent pathways, in which condition generation X became based on its presence rather than absence. When agreement with influence was included to configurations C5 and C6 as a condition (C12 and C13), following model M1a, there was no apparent relevance to complementary causal conditions other than configuration C13 no longer produced an intermediate solution, as shown in Table E-33.

The complex solutions were identical for *influence* intelligibility with only marginal, differences in consistency, coverage, and diversity levels. Intermediate solutions however contrasted with the findings for power intelligibility whereby the only intermediate solution was given by configuration C13 through excluding conditions absence of centrality (Cent) and senior management (SML) from pathway S3.

Model M3a (ADJUSTED Data)

POWER Definition Agreement

	C9					C12 (C5 + INFa)							C13 (C6 + INFa)		
	Complex		Intermediate			Complex			Intermediate				Complex		
	S1	S2	S1	S2	S3	S1	S2	S3	S1	S2	S3	S4	S1	S2	S3
Centrality (Cent)		⊗	⊗			⊗		⊗	⊗	⊗				●	⊗
Senior Management (SML)		⊗		⊗			●	⊗			⊗	●	●		⊗
Commercial (COM)															
Mature Perspective (MatP)	●				●	●	●		●			●	●	●	⊗
Reflection Time (RTime)	-	-	-	-	-		●			●	●		-	-	-
Generation X (GenX)	-	-	-	-	-	-	-	-	-	-	-	-	●	●	⊗
Influence (INFa)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Power (POWa)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Cases	17	3	8	6	17	6	8	2	6	6	2	8	4	5	1
Total Cases	**18**		**20**			**12**			**13**				**7**		
Raw Coverage	0.813	0.316	0.550	0.500	0.813	0.475	0.578	0.247	0.475	0.413	0.303	0.578	0.431	0.381	0.194
Unique Coverage	0.550	0.053	0.022	0.053	0.206	0.081	0.231	0.047	0.081	0.009	0.031	0.206	0.097	0.059	0.144
Consistency	0.956	0.953	0.936	0.958	0.956	0.950	0.979	0.963	0.950	0.943	0.970	0.979	1	1	1
% Diversity	31.25%		31.25%			21.88%			21.88%				12.50%		
Overall Solution Consistency	**0.957**		**0.957**			**0.957**			**0.957**				**0.957**		
Overall Solution Coverage	**0.756**		**0.756**			**0.756**			**0.756**				**0.756**		

◉ = core causal condition present ⊗(boxed) = core causal condition absent ■ = necessary condition present
● = complimentary causal condition present ⊗ = complimentary causal condition absent - = condition not in configuration

Table E-33. Model M1a alternative plausible configurations leading to actual intelligibility

Across all complex and intermediate solutions for both power and influence intelligibility, the maximum solution consistency was 1.00 and the minimum 0.942, and for solution convergence, the maximum was 0.796 and the minimum was 0.583. The strongest solution for both power and influence intelligibility based on *primary* and *secondary* conditions (C5 or C6) alone was solution C5 given a higher diversity level of 43.75% compared to 25% for solution C6. For both solutions diversity reduced to 21.88% and 12.5% respectively when intelligibility of influence and power was included as a further condition (C12, C13).

Solution C5 was driven by pathway S2, joint conditions mature perspective (MatP) and senior management (SML) thereafter pathway S1, through combined conditions mature perspective (MatP) and the absence of centrality (Cent). The final pathway as noted previously was underpinned by condition reflection time (RTime) in combination with the absence of centrality (Cent) and senior management (SML) role experience.

Solution C6 was driven by pathway S1 that was similar to solution C5 in consisting again of mature perspective (MatP) and senior management (SML), but also included condition generation X (GenX), thereafter also strongly driven by pathway S2 that included conditions centrality (Cent), mature perspective (MatP), and again generation X (GenX). The final pathway as noted previously was driven by the joint absence of all four conditions.

Thus, across solutions primary and secondary conditions were relevant in some combination in accordance with model M3a (Figure E-14). Notwithstanding, again as with all solutions obtained across analysis 1, despite reasonably strong overall solution consistency and convergence levels confirmed to be non-asymmetric relationships, these were based on a small number of good empirical cases, largely driven by causal *assumptions*, representing highly tentative findings. The combined findings from model M1a and M3a translate into a plausible empirically grounded model E-Ma of conditions relevant to *actual* intelligibility of power and influence, as shown in Figure E-15.
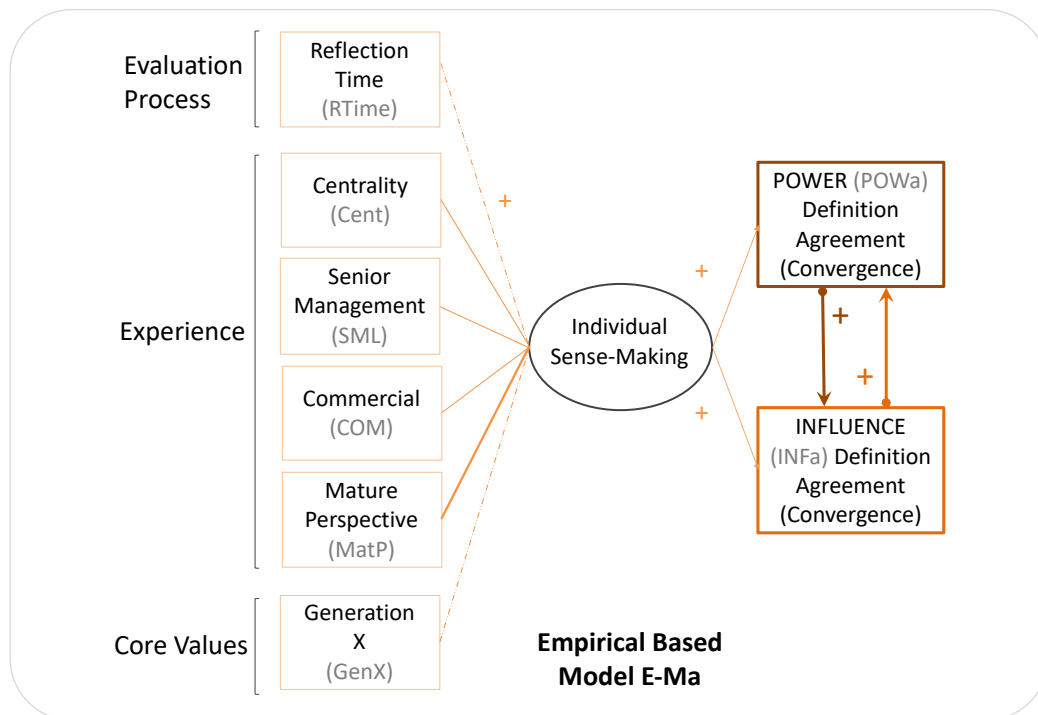
Figure E-15. Model E-Ma – Actual intelligibility tentative causal conditions

All primary conditions were thereby tentatively found jointly relevant to influence and power intelligibility through various conjunctural relationships where the presence of a mature perspective (MatP) across solutions appeared most relevant. Reflection time (RTime) and generation X (GenX) were also found causally relevant contrary to their posited theoretical significance, but less relevant being either integral to and driving weaker pathways with very low unique coverage ranging from 0.047 down to 0.009 as in the case of reflective time (RTime) or being integral to a pathway consistently mirroring condition mature perspective as in the case of generation X (GenX). The bi-directional necessary and sufficient causal relationship between power and influence intelligibility (Figure E-12) suggested condition configurations led first to agreement with influence thereafter power or vice versa, or alternatively intelligibility of both contemporaneously.

Intelligibility synthesis (analysis 1 and analysis 2)

Foremost, revealed was a difference in fsQCA computed solutions governed by theoretical causal assumptions (M1p; M1a) versus empirical consistency values (M3p; M3a). Whilst in analysis 1 based on perceived (raw) intelligibility data, the

298

difference was masked by lack of full support for both models M1p and M3p, in analysis 2 based on actual (adjusted) intelligibility, there was full support for model M3a and thereby not model M1a, exposing the difference. Each analysis thus also yielded different findings.

Analysis 1 yielded a plausible empirically grounded causal model E-Mp of perceived intelligibility (Figure E-11) and Analysis 2 yielded a different plausible empirically grounded model E-Ma of actual intelligibility (Figure E-15). Although both models supported causal relevance of primary conditions (role centrality, mature perspective, commercial role, and senior management) used to select cases, each yielded different configuration solutions and pathways unsupported by posited theory (M1p; M1a) most notably the causal relevance of the absence rather than presence of condition senior management role in conjunction with other conditions. In addition model E-Ma gave causal relevancy to secondary conditions as follows.

First evaluation condition prior reflection time emerged as causally relevant to actual intelligibility. This was partially supported by qualitative analysis (Chapter 5, Section 5.4.6). In explicating perceptions of both power and influence, cases naturally engaged in reflective *analysis* that tended not only to better reveal attributed meanings including interpretation and emotive factors but for several cases, also shifted meanings more towards agreement. Nothing precludes this having arisen during *prior* reflection and is not strictly given by *time* engaged in reflection. Reflection time as a condition was not therefore necessarily a simple measure of time invested gathering thoughts to be revealed almost as stable facts of the matter, theorised to be irrelevant, rather possibly signified something more complex such as reasoning and sense-making, at least for some cases.

Second, although generation as a condition generally appeared irrelevant, generation X (GenX) emerged as positively related to intelligibility. A negative not positive relationship was premised on Gen X cases valuing independence and self-reliance highly enough to strongly reject any of misuse of power and relate influence rather than power to outcomes. Again, qualitative analysis (Chapter 5, Section 5.4.6) supported a strong link between influence and outcomes based on

effectiveness and human values including such things as reasoned argument and respect for others, but this was *not* limited to generation X (Gen X) rather spanned generations (GenY, GenBB) and did not preclude attributing outcomes to power. Thus, it may be the case that condition Gen X represented more a sub-set of mature perspective (MatP) than generation X *core values* per se because both conditions are age-based, noting 9 cases were borderline generation cases (Chapter 5, Section 5.4.2.2), effectively rendering generation X the most highly represented generation (set membership =/> 0.5) and no other generation bore causal relevance. Notwithstanding, core values were clearly relevant to meanings attributed to power and influence and somewhat emotively used to distinguish between the two (Chapter 5, Section 5.4.6).

On final analysis, posited theoretical grounds for causality were acknowledged to be weak. Equally empirically grounded models E-Mp and E-Ma were weak given both were only supported by a small number of good empirical cases within an already small-N study.

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