Accepted refereed manuscript of: Burt G, Mackay D & Mendibil K (2021) Overcoming multi-stakeholder fragmented narratives in land use, woodland and forestry policy: The role scenario planning and 'dissociative jolts'. *Technological Forecasting and Social Change*, 166, Art. No.: 120663. https://doi.org/10.1016/j.techfore.2021.120663

Overcoming multi-stakeholder fragmented narratives in land use, woodland and forestry policy: The role scenario planning and '*dissociative jolts*'

Abstract

Land use, woodland and forestry policy continues to evolve in response to unfolding economic, social and environmental challenges and opportunities. Concerns about integration across the stakeholder landscape impacting delivery and implementation of policy are common. Competing public and private sector stakeholder goals, narratives and actions are problematic. Developing insights from a recent case study, we uncover fragmentation in narratives, tensions in priorities, and misunderstandings at multiple levels between stakeholders. We identify the corrective influence of '*dissociative jolts*' to trigger stakeholder's self-realisation of the extent of their unintentionally diverse interpretations of policy. These 'dissociative jolts' moments triggered open discussion, debate and reflexive questioning by the participants, enabling them to constructively contest their differences. In doing so, the participants were able to challenge and deconstruct their assumptions, reconstruct and develop new, shared understanding without trauma or denial. The structured mechanisms and formalisms of the intuitive-logics scenario planning approach provided a psychologically safe space with openness and equality of input to surface, explore, question and defragment stakeholder assumptions and narratives. The outcome of this defragmentation process was the collective recognition of failure, if the situation did not change, the dissolution of observed tensions conflicts and dilemmas, and the negotiated agreement for future action by the diverse stakeholder group.

Key words: Woodlands forestry policy and practice; fragmentation in collective narratives; scenario planning; dissociative jolts.

1. Introduction

In a complex and ever-changing policy landscape, how can common understanding of the implications of land use, woodlands and forestry policy be achieved within a diverse mutli-stakeholder group? Without shared understanding of land use, woodlands and forestry policy, the possibility of coherent and effective stakeholder action is diminished (Eden, 1996; Innes, 2004; Ackermann and Eden, 2011). Scholars contend that common stakeholder understanding would thus appear to be a priority concern for policy makers as an enabler of the attainment of policy objectives (Aggeri, 1999; van de Kerkhof, 2006; van Oosterzee, Dale and Preece, 2014; Paschen and Ison, 2014). In this regard, there are recent calls for new approaches and innovative interfaces to develop policy (Volkery and Riberio, 2009; Soderberg, 2016).

There have also been calls to include multiple perspectives and greater stakeholder participation in the policy development process (Munier and Ronde, 2001; Couclelis, 2005; Renn, 2006; Wyborn, 2015; Riley, 2016). Broad challenges to achieving effective multi-stakeholder involvement in policy development include differing stakeholder priorities, the rhetoric of policy perceived as disconnected from practice, differing views of uncertainty and confusion across stakeholder narratives and language (Yang and Callahan, 2007; Jaegersberg and Ure, 2011; Delgado-Ceballos, Aragon-Correa, Ortiz-de-Mandojana and Rueda-Manzanares, 2012).

In this paper, we explore the potential of the intuitive logics scenario planning approach (van der Heijden, Bradfield, Burt, Cairns and Wright, 2002; Cairns, Wright and Fairbrother, 2016) to enable productive stakeholder dialogue and addressing uncertainty in relation to land use, woodlands and forestry policy. By examining these key issues, we seek to contribute to the understanding of what constitutes effective policymaking practice. Promoting effective dialogue through reconciling narratives is an under-explored area in policy development (Vaaro, Sonenshein and Boje, 2016). Semantic differences i.e. same words different meaning, in stakeholders narratives are subtle, often undetected, and therefore problematic in policy development (Fenton and Langley, 2011; Bosma, Chia and Fouweather, 2016).

Hallegatte (2009, p 240) proposed five generic strategies as broad options for those attempting to navigate policy uncertainties surrounding land-use, woodlands and forestry, climate change and precipitation. Hallegate also argues for “novelty in the application of decision-making methods” to address situation specific uncertainties in policy development (2009, p 242). Yet, intriguingly embracing uncertainty during policy development is perceived to add to (rather than reduce) the challenges facing policy-makers (Hobbs, 2009; Sing et al, 2013). So, how might uncertainty be addressed when engaging in policymaking with diverse multi-stakeholder groups?

From the findings of an empirical case of policymaking for Scottish woodlands, engaging a multi-stakeholder group in scenario planning, we identify novel insights into the role of ‘*dissociative jolts*’ as a psychological mechanism enabling participants to open up, explore and understand divergences between individual stakeholder narratives. As these dissociative jolts occurred, participants reflexively challenged their assumptions and narratives, in a non-traumatic way, helping them to develop an agreed multi-stakeholder response (Deuten & Rip, 2000; Llewellyn, 2001). Supported by the formalisms of the intuitive-logics scenario planning process, participants were able to recognise, confront and overcome fragmentation, tensions,

dilemmas and limitations of assumptions and language (Chia and Morgan, 1996; Mitchell, Lockwood, Moore and Clement, 2015; Bosma, Chia and Fouweather, 2016). With emergent understanding of the pending failure about land use woodlands and forestry policy, this provided the trigger to negotiate collectively agreed solutions (Bartel and Garud, 2009; Fenton & Langley, 2011; Paschen and Ison, 2014). These solutions had incentives for all stakeholders given the "mutual reciprocity in their interests" (Innes, 2004, p 5). Ultimately, our case findings suggest that reconciling – or defragmenting – competing multi-stakeholder narratives whilst addressing uncertainty contributes to acceptance of policymaking outcomes.

Our findings also contribute to understanding of scenario planning's role in policymaking. There are claims that whilst the scenario planning approach helps to build consensus, the subsequent implementation of agreed actions is problematic (Cairns, Ahmed, Mullett and Wright, 2013). However, there are counter-claims that self-expression of difference and mutual learning help with co-generation of knowledge (Soste, Wang, Robertson, Chaffe, Handley and Wei, 2015; Wright, Stahl and Hatzakies, 2020). Given the limited theoretical referents in the extant scenario and strategic foresight literature, we were able to build explanation from dissociative theory (Lilienfeld et al, 1999) as to how stakeholder narratives can be defragmented and uncertainty addressed in a multi-stakeholder policymaking environment, aligning participant support behind policy objective outcomes.

The paper is set out as follows. First, we discuss the evolution of and challenges facing British and Scottish woodlands and forestry; next is the challenge in multi-stakeholder settings which are characterised by uncertainty, and introduce the possibilities using scenario planning to support strategic conversations in such circumstances. We then present the research context and case background; research methods follows, including exemplar empirical data; followed by a discussion of the significance of the 'dissociative jolts' theoretical contribution, concluding with implications for theory and practice.

2. The evolving context of British and Scottish woodlands and forestry policy

To inform the reader of the policy context of the case study in this paper, we present an overview of British and Scottish Woodlands and Forestry Policy history of the last century. The evolution of woodlands and forestry in Britain has been characterised as having four paradigms – mono-functional forestry, multi-functional forestry, sustainable forestry and ecosystems approach (see figure 1 below) (Raum and Potter, 2015). Conifer trees have dominated new woodland planting since 1920, and it is in the period from 1990 that broadleaf tree planting complemented conifer tree planting (Forestry Commission, 2015).

The mono-functional paradigm covered the period from 1900 to 1970, which is characterised by a single narrative of 'industrial forest' (Mather, 1991). In the first two decades of this period woodlands and forestry accounted for approximately 5% of British land. The advent of the First World War hastened the need for intensive investment in timber for national security. At the same time, the Forestry Commission was established. It was from 1950 onwards that we can identify an exponential growth in new woodland and forestry planting as timber production became a prime source of materials for construction.

The multi-functional forestry paradigm covered the period from 1970 to 1990 (Mather, 1991). In this paradigm, forestry is characterised by a dual narrative of market goods and non-market social benefits given the influence of EU policy on Britain and Scotland. Scotland has the most

concentrated land ownership in the world (Cramb, 1996; Wightman, 1996; Warren, 2002) leading to competing public-private interests and tensions around woodland and forestry afforestation and regeneration (Hobbs, 2009).

The sustainable forestry paradigm, from 1990 to present day (Cubbage et al, 2007), seeks to balance economic, social and ecological needs and goals (Hobbs, 2009; Raum and Potter, 2015). The sustainability forestry paradigm is influenced by the United Nations 1992 Rio conference on Environment & Development, which mainstreamed the concept of 'sustainable development' into policy narratives.

The ecosystems paradigm ran in parallel to the sustainable forestry paradigm from the mid-2000 to today (Valatin and Starling, 2010). It is within this period that the Scottish Government set a target expansion rate of 10,000 hectares per annum for ten years. The essence of the ecosystems approach is that woodlands and forests are now considered as providing well-being services and benefits to a highly diverse group of stakeholders. Consequently, the ecosystems approach is characterised by increased ambiguity, complexity and uncertainty in practice, as the policy aims and objectives are wider than in the past. Policy aims and objectives include issues such as tackling greenhouse gas emissions, improving urban areas and landscapes, creating sustainable forest products, enhancing rural development, restoring habitats and adapting to climate change including carbon capture and flood resilience, managing ecosystems services and providing wider community social and economic benefits, an intractable combination of issues (Churchman, 1967; Valatin and Starling, 2010). These manifold demands have increased the complexity of woodlands and forestry management, and driven a need for greater interconnectivity between a large number of stakeholders. With a larger, more diverse base of stakeholders to consider comes the challenge of reconciling multiple competing narratives covering technocratic, ecological, and commercial concerns for those in woodland and forestry policy (Munoz-Rojas et al, 2015).

<Insert Figure 1 about here>

Woodland and forestry in Scotland has a complicated history of competing interests and different policy drivers, and the recent recognition of the benefits of sustainable development and ecosystem services has led to increasingly complex policies and an increase in the number and interconnectivity of stakeholders (Morgan-Davies, Wilson and Waterhouse, 2015; Raum and Potter, 2015; Glass, McMorran, and Thomson, 2019) (see Figure 1 above). These developments require coordination across sectors, scales (time and spatial) and stakeholder groups, otherwise any (new) policies are at risk of becoming ineffective (Munoz-Rojas, Nijnik, Gonzalez-Puente and Cortines-Garcia, 2015). Furthermore, the policy complexities are compounded by a range of uncertainties, such as the impact of woodland and forestry financial incentives, the UK's exit from the EU, decline in demand for wood products from construction, and fluctuations in global prices for timber (Loukopoulos and Scholz, 2004; Slee, 2006; Hobbs, 2009; Sing, Towers and Ellis, 2013; Watt, 2016).

Such levels of ambiguity, complexity and uncertainty associated with land use, woodland and forestry expansion (Hallegate, 2009) has led to calls for new methods to help stakeholders address contemporary challenges (Lempert and Schlesinger, 2000; Dearing, Braimoh, Reenberg, Turner, Van der Leeuw, 2010; Brown and Castellazzi, 2014). Of primary interest are methods that enable the reconciliation of potentially competing economic, political and socio-cultural interests between multi-stakeholders (Holl and Smith, 2007; Hobbs, 2009;

Morgan-Davies, Wilson and Waterhouse, 2015). Such calls have also extended to the need for integration of top-down and bottom-up (local) concerns and voices (Brown and Catellazzi, 2014). However, whilst they use the same words and language, their narratives hold different meaning depending on stakeholder backgrounds and contexts (Boden, 1997; Geiger and Antonacopoulou, 2009). For example, discourses and narratives at the meta-level influence local planning approaches and at the same time exclude key micro-level voices, whilst trying to integrate and balance economic, environmental and societal priorities (Palmer, 2014; Splash and Aslaksen, 2015).

To address fragmented multi-stakeholder narratives and issues of uncertainty, Floyd and Zunevich (2010) propose increasing the role of foresight in identifying new possibilities between stakeholders. In this paper, we focus on scenario planning as one such foresight approach to provide time and a psychologically-safe space – openness and equality of input for polyphonic voices, unconstrained problem definition, and an opportunity to reconcile diverse and competing stakeholder interests (Bezold, 2010; Warth, von der Gracht and Darkow, 2013; Spickermann, Grienitz and von der Gracht, 2014; Sokolov, Veslitskaya, Carabias and Yildrum, 2019).

3. Scenario planning, uncertainty and fostering multi-stakeholder shared narratives

Scenario planning and uncertainty

The term scenario planning describes the creation and evaluation of plausible alternative futures. There are various approaches to scenario planning including probabilistic modelling (Godet, 2000; Godet and Roubelat, 1996), stochastic modelling and regression analysis (Dong, Jin and Deng, 2020; Guo et al, 2020) where probability based models of uncertainties are developed with input from experts. These approaches contrast with the intuitive-logics approach to scenario planning, discussed in this paper, where the focus is on polyphonic voices opening up and discussing uncertainties. Consequently, the outcome from the intuitive-logics approach for participants is highly unpredictable as the journey is unknown at the outset.

The intuitive-logics scenario planning is a process that supports the exploration of uncertainty to engender foresight (van der Heijden, Bradfield, Burt, Cairns and Wright, 2002; Burt and van der Heijden, 2008; Ringland, 2010; Bezold, 2010). The scenario planning process provides time and ‘unmarked space’ (Spencer Brown, 1969) for participants to share experiences and explore the implications of ongoing volatility, uncertainty, complexity and ambiguity – VUCA (Wack, 1985a; Wack, 1985b; van der Heijden, Bradfield, Burt, Cairns and Wright, 2002; Docherty and McKiernan, 2008; Bowman, 2016). This approach contrasts with modelling-based scenario development (Kriegler, O’Neill, Hallegate, Kram, Lempert, Moss and Willbanks, 2012; van Vuuren, Riahi, Moss, Edmonds, Thomson, Nakicenovic, Kram, Berkhout, Swart, Janetos, Rose and Arnell, 2012).

Originating in a military context to explore and understand the pathways to thermonuclear war (Kahn, 1962; Kahn and Weiner, 1967) scenario planning was adopted by business in the late 1970s/early 1980s as an alternative to forecasting-based corporate planning approaches (Amara and Lipinsky, 1983; Wack, 1985a; Wack, 1985b). The contextual environment at the time was increasingly considered as less stable and more unpredictable than in the past (Emery and Trist, 1965), and the reliance on linear forecasts, as the basis of planning, with more-of-the-same assumptions resulted in surprises and discontinuities (Wack, 1985a; Wack,

1985b; Duncan and Wack, 1983). In addressing surprises and discontinuities, Wack (1985b) stated that "the key problem with scenario planning is the interface of scenarios and decision makers is ignored or neglected. By interface, I mean the point at which the scenario really touches a chord in the manager's mind – the moment at which it has real meaning for him or her" (p 139). Wack (1985b) highlights the challenge when he stated that "the purpose (*of scenarios*) is to gather and transform information of strategic significance into fresh perceptions. This transformation process is not trivial – more often than not it does not happen. When it works, it is a creative experience that generates a heartfelt "Aha" from your managers and leads to strategic insights beyond the mind's previous reach" (p 140). Surprises and discontinuities in business and policy domains resulted in the growth of scenario planning in practice to support strategizing (Ringland et al, 1999; Grant, 2003; Xiang and Clark, 2003; Cairns et al, 2004; Cornelius, van de Putte and Romani, 2005; Burt, 2007). Equally, it is from this historical foundation that has spurred on research since to try on find explanations for the "aha" moment.

Insert figure 2 here

In recent developments, several explanations for the "aha" moment have been developed, including unlearning (Burt and Nair, 2020) where unlearning is defined as "involving a 'letting go' or relaxing of deeply held assumptions and this in turn inadvertently leads to strategic foresight". In addition, strategic reframing (Ramirez, Churchhouse, Palermo, Hoffman, 2017; Mukherjee, Ramirez, Cuthbertson, 2020), where reframing is a two-part displacement process to challenge managerial assumptions. However, Mukherjee et al (2020) go on to state that "despite the reframing power of scenario research being well documented in the literature, there is a lack of detailed explanation as to how exactly and when scenario research actually enables the reframing to take place" (p 3). Addressing the gap about the trigger of either unlearning or reframing is the focus of this paper.

Fostering shared narratives

In supporting business strategy and policy development, increasing attention is given to the role scenario planning can play as a site of strategic conversation (van der Heijden, 2005; Mackay and Burt, 2015; Burt, Mackay, van der Heijden and Verheijdt, 2017). Considering scenarios as strategic conversation draws focus to how the formalisms of the intuitive-logics scenario process might create an 'open space' for participant interaction to expose multiple perspectives (Whitehead, 1929; Cooper, 2005). Strategic conversation recognises that strategy and policy development is something that people do, rather than a property of organization (Whittington, 2006). The "actual doing of strategizing in organizations takes place in the form of talk, text and conversation" (Fenton and Langley, 2011, p 1172) where narratives are a "powerful rhetorical device in developing and enabling policy and strategy" (Fenton and Langley, 2011, p 1177).

The role of stakeholder talk, conversation and narratives places a focus on the reflexive and recursive relationship between time and talk in the constitution of making sense of uncertainty (Goodman, 1978; Boden, 1997). The co-creation of order through communication rises to the fore as "communication, consisting of a synthesis of information, utterance and understanding, enables systems to develop meaning" (Hernes, 2008, p 80). Here, the relational activity of co-creation involves abstracting order from factors perceived as creating uncertainty, in a process involving disintegration and reintegration, disordering and reordering (Luhmann, 1986)

enabling a temporary reconciliation of diverse perspectives and interpretations of what the future may hold (Chia, 2004). Such a process recognises the situated potential of specific stakeholder contexts. To examine the role of strategic conversation implies a need to understand the multiple perspectives of stakeholders, and equally how reconciliation of these perspectives occurs through the reflexive connecting of fragments of conversations over time (Deuten and Rip, 2000; Kuhn, 2008; Fenton and Langley, 2011; Vaara, Sonenshein, Boje, 2016). Doing so requires research activity to focus on the "continual layering of interactions and the building of one fragmented narrative on another resulting over time in the emergence of a dominant thread that becomes taken for granted and incorporated into subsequent interactions" (Fenton and Langley, 2011, p 1186).

Scenario planning approaches have been applied in a wide range of policymaking contexts to support multi-stakeholder engagement. These contexts include: future governance of innovation policy in Europe (Kuhlmann, 2001), Indonesian forestry (Pumomo, Mendoza, Prabhu and Yasmi, 2005), renewable energy in Austria (Madlener, Kowalski and Stagl, 2007), Edinburgh City region and its international performance gap (Docherty and McKiernan, 2008), South African government and the Mont Fleur political transition scenarios (Le Roux and Maphai, 1992), electric drive vehicles in Germany (Warth, von der Gracht and Darkow, 2013), biodiversity in the Australian alps (Mitchell, Lockwood, Moore and Clement, 2015) and smart cities development (Sokolov, Veslitskaya, Carabias and Yildrum, 2019). However, inertial forces and risk adverse politicians affect the potential to adopt insights from scenario planning exercises - "the political reality of maintaining an uncontroversial status quo, even if this avoids essential actions and risks embedding long term genteel decline" (Doherty and McKiernan, 2008, p 994).

In summary, strategic conversation, with intuitive logics scenario process, is an unpredictable process embracing polyphonic voices, contextual uncertainty and competing stakeholder priorities and objectives. Can strategic conversation help develop common understanding between stakeholders?

In the following section, we describe the context, case background and empirical evidence from a recent multi-stakeholder case study initiated by the Confederation of Forestry Industry (CONFOR). Within a workshop setting, scenario planning was deployed to provide a psychologically safe space for participants to explore the future of woodlands and forestry in Scotland. The practical aim was to explore issues that impact on the Scottish Government's land use, woodland and forestry expansion targets, defragment stakeholder meanings expressed through competing narratives and views of uncertainty, and to develop consensus across the policy and business domains of effective policymaking objectives. The further research aim was to explore how mechanisms of scenario planning might enable effective multi-stakeholder policymaking.

4. Context and case background

The setting for our case study is the land use, woodland and forestry policy landscape in Scotland. Through the Climate Change (Scotland) Act 2009, the Scottish Government set out a long-term target to reduce greenhouse gas emissions by 80% by 2050 (relative to 1990 levels), setting an interim target to reduce emissions by 42% in 2020. Although gross Scottish emissions fell nearly 30% compared with 24% for the UK as a whole, the Scottish Government failed to meet its greenhouse gas reduction targets in the period 2010 to 2014. The Scottish

Government subsequently set a target of new planting of 10,000 hectares of new woodland per year, with a target to plant 100,000 hectares by 2022 (Woodland Expansion Advisory Group, 2102; Scottish Government, 2013; Scottish Government, 2014). This target was revised in 2016 to 12,000 hectares per annum rising to 15,000 hectares to meet a new target of 33 million new trees planted by 2024/25. The revision process was intended to align land use, woodlands and forestry policies with the national climate change targets, whilst shaping land use objectives in keeping with sustainability and ecosystem-approach paradigms (Forestry Commission Scotland, 2009; see Figure 1 below). As approximately 70% of woodland in Scotland is privately owned, woodland and forestry expansion relies heavily on private land managers. Hence, land use, woodlands and forestry policy aims to link macro-scale sustainability (i.e. national- and international-level climate change mitigation and adaptation strategies) with meso- and micro-scale sustainability impacting land owners. However, recent rates of new planting have not been in line with the annual 10,000 hectare policy target. Yet, despite the introduction of a new streamlined Forestry Grant Scheme in 2013 (see Figure 1 above) to ease tensions existing between policy and land use management (Hobbs, 2009; Brown and Castellazi, 2014; Thomas, Paterson, Metzger and Sing, 2015; Morgan-Davies, Wilson and Waterhouse, 2015), and unless resolved, such tensions would continue to impact policy in the future.

4.1 Case background – host organisation

CONFOR, the forestry industry body, has the objective to support sustainable forestry and wood-using businesses through political engagement, market promotion and supporting industry member's competitiveness. CONFOR's priorities include (i) helping to build the market for wood and forest products, (ii) creating a supportive policy environment for forestry and wood-using businesses at all levels of government, (iii) working with partners to tackle ongoing sectorial issues such as research, skills and business support, and (iv) providing high quality valued member services.

4.2 Key participating stakeholder organizations

CONFOR brought together key stakeholders in the Scottish woodlands and forestry sector including Scottish Government, various relevant governmental bodies including Scottish Environment Protection Agency (SEPA), Forestry Commission Scotland, Forestry Enterprise Scotland, Scottish Natural Heritage, Stirling Council and Scottish Woodlands (covering woodlands and forestry as well as agriculture), private sector owners and relevant supply chain organisations including Egger, James Jones Sawmills and Tilhill Forestry, and two other industry bodies including National Farmers Union Scotland and Scottish Timber and Transport Forum. These organisations were represented at chief executive, senior executive or technical expert level, the seventeen individuals attending the workshop from thirteen organisations reflected a wide range of political and socio-economic interests in the woodland and forestry policy context. The intention was to engage with a wide range of diverse viewpoints and interests, which would ensure openness in the dialogue. The workshop was facilitated by an independent scenario practitioner.

CONFOR's rationale for establishing this project was to explore the possibilities inherent in the publication '*Re-wiring the economy, ten tasks, ten years*' (Reynolds, 2015), which set out a coherent approach to sustainability across the scales of government, the finance sector and business. The "*Re-wiring the economy*" was considered by CONFOR as approach to bring

the multi-stakeholders together for a strategic conversation. The context was set against policy objectives to increase woodland and forestry new planting activity, which had declined year-on-year since 2000, resulting in forecasts predicting a decline in availability of timber from 2027 (if the current decline was not arrested). In addition, the UK imports £6billion of timber annually, providing an economic incentive for growth in UK timber activity. How to reverse these trends within the current woodland and forestry policy context was of keen interest to CONFOR.

5. Research methods and empirical data

5.1 *Primary empirical data*

The project provided opportunities to gather a variety of empirical data (Rossman and Rallis, 1998). Primary data sources included in-vivo workshop interactions and participant observations (Boje, 1991; Greatbatch and Clark, 2010; Ingold, 2011); critical incidents during the multi-stakeholder engagement (Flanaghan, 1954; Woolsey, 1986; Chell, 1998; Butterfield et al, 2005), and short informal meetings with key informants (Tremblay, 1982). Here, participant observation refers not to "see what is 'out there'" but rather to embrace and "watch what is going on*"* (Ingold 2011, p 223). Three independent participant observers recorded detailed verbatim notes, capturing speaker, setting, time, interactions and responses. These in situ moments were discussed with the participant's at a suitable time, in order to develop a deeper understanding of their comment(s) (Miles & Huberman, 1994). By doing so the participant observer becomes more deeply embroiled in the world of the participant, not "distanced or disinterested" (Ingold, 2011, p 223), but, empathetic to the creative moments of insight as they occur. The fully elaborated critical incidents, sixty-five in total, were recorded in the research database.

In addition, video recording of stakeholder conversations and interactions (Bray et al, 2000) during the workshop facilitated the real-time capture of the range of views, debates and exchanges between stakeholders as they occurred which enabled further analysis and interpretation of critical incidents (Pentland, 1999; Silverman, 2013). The video recording was transcribed fully with words, individual speaking and time of speech noted. The research team, i.e. participant observers added their notes and observations to the transcribed materials (Ingold, 2011). The workshop started at 9.00am and finished at 6.00pm.

All empirical data was coded and recorded in the research database for further analysis (Miles and Huberman, 1994; Strauss and Corbin, 1998). This was the foundation for subsequent iteration between analysis and interpretation (Gioia, Corley and Hamilton, 2012).

During the initial phase of data analysis, we first moved from the raw empirical data to develop first order analysis (Van Maanen, 1979a; 1979b; Gioia et al, 2012), the form of 'open coding' (Strauss and Corbin, 1998). We were initially guided by the three concerns to the stakeholders - (i) leadership, (ii) partnership and (iii) financial incentives (see section 5.3 below). The iterative next step was analysis and coding of the data to identify first order concepts and then subsequently, more abstract second order themes/aggregate dimensions were developed, to answer the question "*what's going on here*?" theoretically (Gioia, Corley and Hamilton, 2012, p20) (see section 5.3 below and figure 4). Our interpretation and curiosity focused on the reaction to the insights gained by the multi-stakeholders about future failure of land use, woodlands and forestry policy, and the implications for all participants. The second order

phase of the data analysis focused on the accommodation made by the participants once they collectively recognised failure and its potential future impact. The participants did not revert to their previously held assumptions, nor hold defensive positions, or reject insights from the scenario process. They searched for an accommodation that would be acceptable to all stakeholders. We could not find an extant theoretical explanation in the scenario or strategic foresight literature. We reviewed Wack's original papers where he mentioned "a-ha moments", which has been the source of significant debate within the scenario or strategic and foresight literature. It was during this period that identified dissociative theory as a possibility to explain the accommodation between the multi-stakeholders. During this phase of the research we moved from inductive theorising to a form of abductive theorising, where we undertook a parallel process of reading dissociative theory as reviewing the empirical conceptualisation (Alvesson and Karreman, 2007; Gioia, Corley and Hamilton, 2012).

5.2 In vivo workshop scenario outcomes

To frame our examination of the impact of scenario planning in the policymaking setting, we now describe the emergent outcomes from the case workshop. The multi-stakeholder scenario workshop involved three stages (van der Heijden et al, 2002). First, generation of uncertainties was undertaken by the participants. Organising their ideas, nine major groupings of uncertainties were identified and agreed by the participants including (i) sector ability to innovate to respond to global demand, (ii) evolution of land use, (iii) Scottish leadership attitude to forestry, (iv) forestry resilience to cope with change, (v) global influences on land use, (vi) perception of economic viability of forestry sector, (vii) public perception of forestry, (viii) extent to which non-market benefits are quantified and traded, and (ix) willingness to align infrastructure planning on land use planning. Second, the participants prioritised the higher-level groupings in terms of most impactful and least predictable, highlighting (i) forestry resilience to cope with change and (ii) global influences on land use as the two priorities to form the basis of a scenario framework (see figures 3 and 4 below). Third, the participants then split into four smaller groups with the challenge of the developing one of the four scenario stories – story (i) "Sustainable integrated forestry management", story (ii) "Clear conscience but lighter wallet, story (iii) "We did not see that coming, and story (iv) "Where have all the trees gone?"; each group then presented their scenario story to the other participants who engaged in testing the robustness of the story. Once all scenario stories were shared the participants identified and discussed the implications for land use policy woodlands and forestry. A short summary of the four scenarios developed during the workshop are:

Scenario 1: "Sustainable integrated forest management" – All stakeholders work to maximise investment in forestry. This helps achieve carbon targets; farmers invest in trees; and the rural economy grows, reversing de-population trends. This source of economic growth was recently exemplified by the NFU Scotland opening its second sawmill to support the industry supply chain.

Scenario 2: "Clear conscience but lighter wallet" – While woodlands and forestry adapt, it happens in the face of fragmented land use, woodlands and carbon policy developments. Many opportunities are not captured and negative effects emerge (e.g. a decline in the sawmill supply chain).

Scenario 3: "We didn't see that coming!" – Climate change targets are met, but woodlands and forestry are not part of the solution. A combination of inappropriate choice in new plantings

and disease in existing woodlands and forestry reduce the ability of the industry supply chain to be effective in the future.

Scenario 4: "Where have all the trees gone?" – Slow-down in the global economy causes growth in cheap imported timber products into Scotland and the rest of the UK. As a consequence, there are fewer new plantings and reduced opportunities in the industry supply chain. Eventually the scale of the decline emerges, taking everyone by surprise.

<Insert figure 3 about here>

<Insert figure 4 about here>

5.3 Exploring the in vivo workshop data for emergent themes and relationships

Across all four scenarios it was clear to and agreed by the participants that the differences in stakeholder attitudes to (i) leadership, (ii) partnership and (iii) financial incentives would have had a significant impact on the future, highlighting them all as crucial components for achieving woodland expansion and land use policy targets in the future.

Given the importance of these issues noted by the participants we undertook a detailed inductive re-examination of the empirical evidence and identified four first order concepts across the empirical data, and then identified two second order themes/aggregate dimensions (Miles and Hubermann, 1994; Gioia, Corley and Hamilton, 2012).

The four first order concepts were: (i) weaknesses in the interconnected network; (ii) policy imbalance; (iii) complexity of stakeholder interests; and (iv) leadership paradox. Each of these themes has an accompanying empirical excerpt to elaborate it. The two-second order themes/aggregate dimensions were: (i) fragmentation, and (ii) future decline. The findings reveal the reflexive process experienced by the stakeholders as they opened up to understand and explore new possibilities. The inductive and iterative data coding and data analysis process is summarised in figure 5 below.

<insert figure 5 about here>

5.3.1 *First order concepts*

The *weaknesses in the interconnected ecological network* identified included a lack of joined up action, lack of integrated policy, lack of clear financial structures, lack of clear consistent and understandable communication, and system fragmentation. One participant's comment highlights one issue in relation to this theme:

> "Clear communication is needed, not just the message. Understanding the message of forestry and eco-systems services. The message is received and understood, not just broadcast it".

Excerpt 1

As a consequence of the weaknesses in the interconnected network *policy imbalances* became evident to the participants. As one participant noted, policy imbalances included issues such as a priority focus on societal benefits (from land use) to the detriment of (woodlands and forestry contributing to) economy and ecology:

> "Government land use policy ignores economic sustainability and incentivises disproportionately public benefits".

Excerpt 2

The participant's comment not only highlights policy imbalances, the comment also highlights the challenge of integrating the public and private sectors objectives.

Complexity of the stakeholder interests, based on current and historical misunderstandings, created a confused and competing landscape between policy and business objectives. This theme was recognised by another participant highlighting a range of concerns, including the lack of integrated policy and joined up action, the lack of clear financial structures, and the lack of clear and consistent communication:

> "We have all sorts of things happening, including diversity of tree species, new planting not concerned with timber production, more regulation and oversight, with more public access, and discussion about the re-introduction of lynx. Lots of public goods there. Yet the sector is trying to communicate what modern forestry really is, it has the same challenge as farming, where old perceptions linger, the new type of agricultural forestry which is not just about public goods".

Excerpt 3

The *leadership paradox* revealed the contradiction of seeking constructive change yet failing to recognise the implications of the previous three themes. Participants recognised the need to resolve the tensions and conflicts in the (ecological) network, including influence of the balance of land use, the challenge of monetising market and non-market/natural capital, and the perception of public support for policy:

> "I think the issue of leadership is based on a clear action plan on how we are going to achieve the targets for woodland expansion of 100,000 hectares. Plan new objectives and principle of it. Targets are great, but how do we get there exactly?"

Excerpt 4

5.4 Second order themes/aggregate dimensions

Across the data, these themes were observed as common ground between the stakeholders. However, despite the identification of this common ground, the level of *fragmentation* of stakeholder narratives was more extensive than had been highlighted during their discussions. Whilst the participants were central to resolving difficulties in achieving policy objectives, they had also played a role in creating the difficulties and potential *failure* in the future. As the data and inductive themes were analysed further, this finding became a central line of developing our theoretical contribution. A representative conversation exchange between two of participants highlights their contribution to the problem:

> "The trouble is people within the industry are too busy working at their jobs to get involved with policy making. And yet those are the people who need to be involved."

> "We are the problem, we are the solution. We need a catalyst that brings everyone together".

Excerpt 5

5.5 Dissociative jolts

The empirical data was explored to seek further empirical clues and insights. One critical incident to illuminate the *dissociative jolt* and its potential consequence occurred during the description of the scenario “Where have all the trees gone?”

> “Policy disconnect between agencies results in land use strategy not fit for purpose, results in skills shortage in the sector, leading to consequential decline in rural population, resulting in unrealised potential of forestry. Timber is seen as unsustainable, resulting in a decline in investment in forestry resources with a reduction in forest area coverage, leading to an increase in imports, causing further significant reduction in investment”.

Excerpt 6

The conversation excerpt reveals that, without denial or blame, as it had not actually happened, the participants were able to imagine *failure* as they discussed the lack of collective stakeholder agreement and integration to achieve environmental, social and economic benefits from significant (under-) investment in woodlands and forestry. Insight about the future target of investing 10,000 hectares every year for 10 years was in serious doubt (in the here and now).

Following on from excerpt 6 above, one stakeholder noted: “it takes a crises or the threat of a crises to get people working together”. And another stakeholder then responded: “turning a positive from a negative, don’t expect us or another sector to give something up willingly, but if you are willing to form a partnership and respect the parties, I see huge potential for agriculture and forestry to work together”.

This was what Sandberg and Tsoukas (2011) describe as a ‘break-down’ moment for the participants as they envisioned collective failure. The envisioned failure acted as a ‘*dissociative jolt*’ for the participants (Lilienfeld et al, 1999), enabling them to reflect on the continuing consequences of the fragmentation in their narratives as well as the potentialities that were emerging from such fragmentation. Excerpts 4, 5 and 6 above reveal that the ‘*dissociative jolt*’ “interrupted the flow of the participant practice, enabling the practitioners to step back from what they routinely do for the sake of improving the way they reason and communicate with others and, thus, solving problems more effectively” (Sandberg and Tsoukas, 2011, p 350).

The dissociative jolt could have resulted in trauma, suppression and compartmentalising of the situation. This would have resulted in denial or seeking the lowest common denominator solution (Innes, 2004). However, the participants realised that if they collaborated under the common umbrella of carbon reduction, a route into collective action on the wider agenda could be achieved. The incentives and mutual reciprocity of their proposed way forward highlighted that no one party could solve or benefit from the situation. Through this, the stakeholders could begin to address their fragmentation and create the conditions to achieve policy targets as well as support the growth ambitions of the forestry sector.

In the next section of the paper, we elaborate on dissociative theory and dissociative jolts; and how they enable us to develop our theoretical contribution. The theoretical contribution provides one explanation on how the process of scenario planning helps trigger a change managerial assumptions.

6. Discussion: Dissociative theory and the 'dissociative jolt'

At the outset of the paper we asked the question: how can common understanding of the implications of land use, woodlands and forestry policy be achieved within a diverse stakeholder group?

6.1 Dissociative theory

Dissociative theory, originating in the 1880s from the work of Pierre Janet (van der Hart and Horst, 1989), identifies two ways of relating experiences: first, splitting-off or isolation of experiences, and, second, integration of ideas and experiences. Dissociative theory has provided the basis for psychology to develop dissociative identity disorder where individuals "compartmentalise experiences into alternative personalities as a means of coping with the emotional situations they experienced" (Lilienfeld et al, 1999, p 507).

Psychological states are either dissociative where individuals are unaware of their actions **or** where the jolt acts as a stimulus to support "adaptive interaction with the surroundings …. to expand or grow through association with new ideas or images" (van der Hart and Horst, 1989, p 401). We argue here that the 'dissociative jolt' encouraged participants to relax their assumptions, dissociate the past, avoid compartmentalising potential futures as something that wouldn't happen, enabling them to develop new assumptions to bring about future-oriented change. By imagining a damaging future that they all wished to avoid, common ground was created between stakeholders, which served as a platform for reconciling narratives, and agreeing policymaking outcomes.

Reviewing the empirical evidence, 'dissociative jolts' led to the sudden realisation between participants that they were complicit in creating potential futures in which policy and business failure was inevitable (if nothing changed). This encouraged participants to reflexively search for new possibilities, rather than refuse to accept their insights about failure. Participants articulated their experiences and perceptions, sharing with others their concerns from both policy and business perspectives. Whilst psychologists' focus of dissociation is predominately on split personality and how it explains personality disorder, they also recognise that the subconscious lies dormant until trauma/jolt expands understanding through acceptance and integration of new insights or associations (van der Hart and Horst, 1989).

The findings revealed the emergence of two interrelated issues that were central to creating the 'dissociative jolt'. First, was the recognition that the potential for failure of land use, woodlands and forestry policy in the future if there was a continuation of fragmentation between participant organisations. Participants were able to connect events and experiences to momentarily stabilise their evolving world. Conversation, in the safe space, enabled understanding to emerge, with the process drawing out stakeholder distinctions and multiple interpretations of events and experiences in a non-deterministic and non-causal way. Second, was the recognition by participants the need for new ways of working, collaborating and integrating across the policy and business domains to accommodate new potentialities, or as Weick (2003) notes "unready-to-hand moments where practitioners discover relevancies that

had been invisible up to that point" (p 468). The realisation that their long held assumptions were limiting alignment between policy and business objectives. The participants were able to disassociate or disconnect themselves from past assumptions without trauma. Collectively, it had dawned on participants that they were the "problem and the solution" and that engaging multiple stakeholder views in policymaking was vital to avoiding future failure.

<insert figure 6 here>

The 'dissociative jolt' triggered a wide-ranging discussion between participants as they shared their thoughts and ideas to develop innovative solutions to the complex issue of policy timeframes, regulation, climate change challenges, and the tensions between agriculture, woodland and forestry policy and practice. Their solution was built around multiple and mutual benefits. In doing so, their solution recognised the needs of hill farmers, industrial farming, recreational woodlands, commercial forestry as well as contributing to climate change goals.

The participants recognised that there were many factors that were combining and contributing to the current under-performance of land use, woodlands and forestry. Consequently, they developed a negotiated consensus that enabled them to overcome past assumptions and develop a new perspective to break-through the current situation.

The safe space provided an opportunity for authentic dialogue between participants as they stepped out of the confines of their individual zone of responsibility to jointly share their views and develop new knowledge on the future of land use, woodlands and forestry (Tsoukas, 2009). The 'dissociative jolt' enabled the development of shared understanding of their role in the current problematic situation. The safe space provided by the formalisms of the scenario process (Firth and Tapinos, 2020) created opportunities to recognise both policy/business tensions as well as recognise the misunderstandings and fragmentation between participants with regard to the role that woodlands and forestry can play in contributing positively to climate change mitigation.

The scenario process provided the time and safe space that encouraged talk and conversation between participants in an open and non-prejudicial way helping stakeholders bring out new insights as "words directly evoke images, and these can seize control of the motor system, and emerge as a psychological automatism without meeting any resistance (van der Hart and Horst, 1989, p 402).

The insights from the case study suggest that whilst policy failure had many contributing and complex factors, fragmentation in multi-stakeholder narratives was a major influencing factor to a lack of coherent collective action. The collectively shared recognition of this failure acted as 'dissociative jolt' to enable participants to articulate their assumptions, understand the implications (and limitations) of these assumptions and provide a safe space for socially negotiated order to replace those previously held assumptions (Eden, 1992; Forester, 1999). The emergence of a new-shared narrative focused on carbon reduction as a common cause provided a mutually agreeable way forward to build shared understanding.

6.2 Theoretical contribution

At the outset of the paper, we asked the question: in a complex and ever-changing policy landscape, how can common understanding of the implications of land use, woodlands and forestry policy be achieved between multi-stakeholders? The intuitive logics scenario planning

approach to help them discuss and debate issues and concerns surrounding policy. We have claims in the literature about the potential of scenario planning to support multi-stakeholders. The literature indicates that scenario planning provides a mechanism to challenge assumptions. There are also claims in the literature about the efficacy of scenario planning in such situations. Dissociative jolts is a mechanism that explains in part how participants were able to recognise and overcome their assumptions, bringing about new potentialities in the safe space provided by the scenarios.

<Insert figure 7 about here>

The contribution highlights the importance of '*dissociative jolts*' as the trigger to the defragmentation of stakeholder narratives. Language, words and narratives have specific meaning at a moment in time and in specific contextual circumstances (Bosma, Chia and Fouweather, 2106). Many words and narratives are rooted in generic, everyday understanding, with well-established general sets of categories and meaning (Starbuck and Milliken, 1988), understood as "regimes of signification" (Chia and Morgan, 1996, p 37). These regimes of signification represent historical and context-specific situations that may be less relevant, potentially misleading, in a constantly changing world. There is therefore a need to develop novel linguistic ways of knowing the constantly changing world. "Novelty punctuates our shared web of meaning, disrupting our ongoing sense-making processes to create a space for fresh linguistic interventions to take place. This creates the potential for new forms of knowing that were previously unimaginable" (Bosma, Chia and Fouweather, 2016, p 16). Such novelty and new insights facilitate the formation and acceptance of a new understanding of the unfolding world enabling dissociation of previously held understandings of the world without trauma or denial.

We argue that the '*dissociative jolts*' created a platform for individual and collective reciprocal questioning of assumptions. We argue that such questioning of assumptions is the fundamental basis of how "a narrative perspective contributes to understanding how people come to construct prospective narratives …. through layered interactions in which an overall thrust and direction emerges" (Fenton and Langley, 2011, p 1189). We argue that the dissociative jolt was fundamental to challenging and questioning assumptions to enable the possibility of new narratives to emerge (Paschen and Ison, 2014).

6.3 Implications for policy and practice

This contribution provides implications for those responsible for complex policy development. Policy developed in isolation of the stakeholders, including those in the business arena, which it is designed to influence, needs to engage with such stakeholders – a relational approach for adaptive governance, otherwise there is a likelihood of policy failure (Wyborn, 2015). However, the case study highlights that the business practitioners have other priorities and distractions. Yet the empirical evidence reveals the mutual reciprocity of understanding about incentives and benefits emerged from the process. Mutual reciprocity was fundamental to overcoming the limitations of taken-for-granted understanding of words, language and narratives, which have either multiple meaning or are reflective of stakeholder-situated understanding of a previous moments in time.

'Dissociative jolts', whilst being uncomfortable for participants, helped both policy and business practitioners to find "creative ways to express things that would otherwise be

inexpressible" (Pinker, 2007, p 241), a 'eureka' moment (Kounios and Beeman, 2015), or as Wack (1985b) stated an "a-ha moment". Reflexively challenging and questioning of assumptions revealed multiple (mis-)interpretations in stakeholders' views on land use woodlands and forestry. Conversations, dialogue and narratives emerging during the scenario planning process may be considered as a subversive and disruptive to bring about semantic transformation within participants.

7. Conclusion

To answer that question we raised at the outset of the paper, we have integrated the literatures of land use policy, psychology, narratives and scenarios in an innovative way. The empirical evidence revealed the extent of fragmentation between the policy and business stakeholders. Failure to recognise and overcome such fragmentation would accentuate future policy failure arising from the annual under-planting of new trees. Multi-stakeholder policy arenas are characterised by fragmented, competing and polyphonic narratives. The '*dissociative jolts*' created conditions in which stakeholders could agree to set differences to one side to explore more effective and mutually beneficial outcomes to target from policy. Building mutually shared and agreed narratives required the dissociation of existing assumptions, and the simultaneous construction of novel, insightful and mutually agreed new understanding that reflected the unfolding circumstances at that moment in time.

The scenario process created a '*dissociative jolts*' moment, how the stakeholders reacted was fundamental to the contribution of this paper. The psychology literature highlights how an individual can create different ways of coping with stress and trauma. The dominant mode of coping is to shut-off and isolate a traumatic experience. The other mode is to accept and absorb the traumatic experience and use it to learn and adapt. The empirical evidence presented here identifies how the stakeholders absorbed the perceived trauma of potential future collective failure and were able to create and agree a collective solution. The stakeholders recognised the mutual benefits to a collective solution, they equally recognised that they needed each other as one public institution or one business could not develop a sustainable solution on their own.

Exposing and challenging polyphonic stakeholder narratives was fundamental to building integrated and sustainable policy and business agreements. The scenario planning process created the time and safe space for negotiation and mediation between the stakeholders. The scenario process was an enabler of authentic dialogue between stakeholders. Authentic dialogue requires openness, avoidance of positional and power bargaining, equality of input during the process, as well as trust and an understanding of reciprocal interests.

Scenario planning has a long established history in supporting management teams. This stems primarily from the work of Shell, as noted above when Wack stated that "the purpose is to gather and transform information of strategic significance into fresh perceptions. The transformation process is not trivial – more often than not it does not happen. When it works, it is a creative experience that generates a heartfelt "Aha!" from your managers and leads to strategic insights beyond the mind's previous reach" (Wack, 1985b, p 140). The theoretical contribution in this paper offers one explanation of this transformational process. The 'dissociative jolts' provides one explanation of the complexity in the relationship between the process of scenario planning and changing assumptions and narratives.

Whilst the theoretical contribution from the case study is novel, we recognise that further research is required from other policy domains. In addition, we recognise that scenario planning is one approach to support multi-stakeholder engagement; other methodologies may also contribute and expand the understanding of the importance of how to bridge the policy/business interface. What other methods could help bridge the policy/business interface?

The paper foregrounds the role of the scenario process to (surprisingly) create the dissociative jolt to help stakeholders recognise and reconcile fragmentation and contradictory narratives. Does it always need such a dissociative jolt to help support and integrate policy and business interfaces in the future?

The paper opens up the possibility of exploration the relationship between scenario planning and the social process that emerges and unfolds, to understand how scenario planning influences social process and how social process influences scenario planning. Whilst this paper has focused on the intuitive logics approach, we would suggest that other foresight-oriented methodologies may also have scope for future theoretical contributions.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Footnote:
Since the empirical study CONFOR published its manifesto to increase tree planting: http://www.confor.org.uk/media/247586/confor-election-manifesto-2019-for-web.pdf; in addition, the Scottish Government announced additional funding for CONFOR and tree funding to meet policy targets: https://www.confor.org.uk/news/latest-news/scottish-budget-includes-funding-rise-for-forestry/

We would like to thank the reviewers for their insightful and helpful observations and comments, which have sharpened the theoretical contribution. We would also like to thank the editor again for helpful comments and guidance.

References

F. Ackermann, C. Eden, Strategic Management of Stakeholders: Theory and Practice, Long Range Planning 44 (2011) 179-196.

F. Aggeri Environmental policies and innovation: A knowledge-based perspective on cooperative approaches, Research Policy 28 (7) (1999) 699-717.

M. Alvesson, D. Karrement, Constructing Mystery: Empirical Matters in Theory Development, Academy of Management Review, 32 (4), (2007) 1265-1281.

R. Amara, A. J. Lipinsky, Business planning for an uncertain future: Scenarios and strategy, Pergammon Press, New York 1983.

C. A. Bartel, R. Garud, The role of narratives in sustaining organizational change, Organization Science 20 (2009) 107-117.

C. Bezold, Lessons from using scenarios for strategic foresight, Technological Forecasting & Social Change 77 (2010) 1513-1518.

D. Boden, Temporal frames: talk and text in organizations, Time & Society 6 (1) (1997) 5-33.

D. Boje, The storytelling organization: A postmodern analysis of Disney as Tamaraland. Academy of Management Journal 38 (4) (1991) 997-1035.

B. Bosma, R. Chia, I. Fouweather, Radical learning through sematic transformation: Capitalizing on novelty, Management Learning 47 (1) (2016) 14-27.

G. Bowman, The practice of scenario planning: An analysis of inter- and intra-organizational strategizing, British Journal of Management 27 (2016) 77-96.

J. N. Bray, J. Lee, L. L. Smith, L. Yorks, Collaborative Inquiry in Practice. Sage Publications Ltd., London (2000).

I. Brown, M. Castellazzi, Scenario analysis for regional decision-making on sustainable multifunctional land uses, Regional Environmental Change 14 (2014) 1357-1371.

L. D. Butterfield, W. A. Borgen, N. E. Amundson, A. T. Maglio, Fifty years of the critical incident technique: 1954-2004 and beyond, *Qualitative Research* 5 (4) (2005) 475–497.

G. Burt, Why are we surprised at surprises? Integrating disruption theory and system analysis with scenario methodology to help identify surprises, disruptions and discontinuities, Technological Forecasting & Social Change 74 (6) (2007) 731-749.

G. Burt, K. van der Heijden, Towards a framework to understand purpose in future studies: The role of Vickers' Appreciative System, Technological Forecasting & Social Change 75 (8) (2008) 1109-1127.

G. Burt, D. Mackay, K. van der Heijden, C. Verheijdt, Openness Disposition: Readiness characteristics that influence participant benefits from scenario planning as strategic conversation, Technological Forecasting & Social Change 124 (2017) 16-25.

G. Burt, A. K. Nair, Rigidities of imagination in scenario planning: Strategic foresight through 'Unlearning', Technological Forecasting & Social Change 153, Article in Press (2020).

G. Cairns, G. Wright, R. Bradfield, K. van der Heijden, G. Burt, Exploring e-government futures through the application of scenario planning, Technological Forecasting & Social Change 71 (3) (2004) 217-238.

G. Cairns, I. Ahmed, J. Mullett. G. Wright, Scenario method and stakeholder engagement: Critical reflections on a climate change scenarios case study, Technological Forecasting & Social Change 80 (2013), 1-10.

G. Cairns, G. Wright, P. Fairbrother, Promoting articulated action from diverse stakeholders in response to public policy scenarios: A case analysis of the use of 'scenario improvisation' method, Technological Forecasting & Social Change 103 (2016) 97-108.

E. Chell, Critical incident technique, in: Symon G and Cassell C (Eds.), Qualitative Methods and Analysis in Organizational Research: A Practical Guide, Sage Publications Ltd., London, pp 51-72 (1998).

R. Chia, Re-educating attention: What is foresight and how is it cultivated? In: Tsoukas, H., Shepherd, J. (Eds.), Managing the future: Foresight in the knowledge economy, Blackwell Publishing, Oxford UK, pp 21-37 (2004).

R. Chia, S. Morgan, Educating the philosopher-manager: De-signing the times, Management Learning 27 (1) (1996) 37-64.

C. W. Churchman, Wicked Problems, Management Science 14 (4) (1967) B141-B142

R. Cooper, Relationality, Organization Studies 26 (11) (2005) 1689-1710.

P. Cornelius, A. van de Putte, M. Romani, Three decades of scenario planning in Shell, California Management Review 48 (1) (2005) 92-109.

H. Couclelis, Where has the future gone? Re-thinking the role of integrated land use models in spatial planning, Environment and Planning A 37 (2005), 1353-1371.

A. Cramb, *Who owns Scotland now? The use and abuse of private land.* Mainstream Publishing Company, Limited, Edinburgh, UK (1996).

F. Cubbage, P. Harou, E. Sills, Policy instruments to enhance multi-functional forest management, Forest Policy and Economics 9 (2007) 833-851.

J. A. Dearing, A. K. Braimoh, A. Reenberg, B. L. Turner, S van der Leeuw, Complex land systems: the need for long term perspectives to assess their future, Ecology and Society 15 (4) (2010) 21-39.

J. Delgado-Ceballos, J. A. Aragon-Correa, N. Ortiz-de-Mandojana, A. Rueda-Manzanares, The Effect of Internal Barriers on the Connection Between Stakeholder Integration and Proactive Environmental Strategies. Journal of Business Ethics 107 (2012) 281-293.

J. J. Deuten, A. Rip, Narrative infrastructure in product creation processes, Organization 7, (2000) 69-93.

I. W. Docherty, P. McKiernan, Scenario planning for the Edinburgh city region, Environment and Planning C 26 (5) (2008) 982-997.

Y. Dong, G. Jin, X. Deng, Dynamic interactive effects of urban land-use efficiency, industrial transformation, and carbon emissions, Journal of Cleaner Production, 270, AinP

N.E. Duncan, P. Wack, Scenarios designed to improve decision making, Planning Review 22 (4) (1983) 18-46.

C. Eden, Strategy development as a social process, Journal of Management Studies 29 (6) (1992) 799-811.

C. Eden, The stakeholder/collaborator strategy workshop, In Huxham C (ed) Creating Collaborative Advantage Sage Publications Ltd London pp 44-56 (1996).

F. E. Emery, E. L. Trist, The causal texture of organisational environments, Human Relations 18 (1965) 21-32.

C. Fenton, A. Langley, Strategy as Practice and the Narrative Turn, Organization Studies 32 (9) (2011) 1171-1196.

D. Firth. E. Tapinos, Opening the black box of scenario planning through realist synthesis, Technological Forecasting & Social Change (2020) 151 (AinP)

J.C. Flanagan, The critical incident technique, Psychological Bulletin 51 (4) (1954) 327-358.

J. Floyd, K. Zunevich, Linking foresight and sustainability: An integral approach, Futures. 42 (1) (2010) 59-68.

J. Forester, The Deliberative Practitioner: Encouraging Participatory Planning Processes, MIT Press, Cambridge MA (1999).

Forestry Commission Scotland, The Scottish Government's Rationale for Woodland Expansion (2009).

Forestry Commission, Forestry Statistics (2015).

D. Geiger, E. Antonacopoulou, Narratives and organizational dynamics: Exploring blind spots and organizational inertia, Journal of Applied Behavioral Science 45 (3) (2009) 411-436.

D. A. Gioia, K. G. Corley, A. L. Hamilton, Seeking qualitative rigor in inductive research: Notes on Gioia methodology, Organizational Research Methods 16 (1) (2012) 15-31.

J. Glass, R. McMorran, S. Thomson, *The effects associated with concentrated and large scale land ownership in Scotland: A Research Review*. Report prepared for Scottish Land Commission (2019).

M. Godet, The Art of Scenarios and Strategic Planning: Tools and Pitfalls, Technological Forecasting & Social Change 65 (1) (2000) 3-22.

M. Godet, F. Roubelat, Creating the future: The use and misuse of scenarios, Long Range Planning 29 (2) (1996) 164-171.

N. Goodman, *Ways of Worldmaking*, Hackett Publishing Company, Indiana, (1978).

R. M. Grant, Strategic planning in turbulent times: Evidence from the oil majors, Strategic Management Journal 24 (6) (2003) 491-517.

D. Greatbatch, T. Clark, The situated production of stories, in Llewellyn, N. and Hindmarsh, J. (eds) Organisation, Interaction and Practice: Studies of Ethnomethodology and Conversation Analysis. Cambridge: Cambridge University Press, pp. 96-118. (2010).

B. Gui, D. He, X. Zhao, Z. Zhang, Y. Dong, Analysis on the spatiotemporal patterns and driving mechanisms of China's agricultural production efficiency from 2000 to 2015, Physics and Chemistry of the Earth, AinP, 2020.

S.Hallegatte, Strategies to adapt to an uncertain climate change, Global Environmental Change 19 (2009) 240-247.

O. van der Hart, R. Horst, The dissociation theory of Pierre Janet, Journal of Traumatic Stress 2 (4) (1989) 397-412.

K. van der Heijden, Scenarios: The art of strategic conversation, second ed. John Wiley & Sons. Chichester, UK, (2005).

K. van der Heijden, R. Bradfield, G. Burt, G. Cairns, G. Wright, The Sixth Sense: Accelerating Organizational Learning with Scenarios*.* John Wiley & Sons Ltd, Chichester, UK, (2002).

T. Hernes, Understanding organization as process: Theory for a tangled world. Routledge, London (2008).

R. Hobbs, Woodland restoration in Scotland: Ecology, history, culture, economics, politics and change, Journal of Environmental Management 90 (2009) 2857-2865.

K. Holl, M. Smith, Scottish upland forests: History lessons for the future, Forest Ecology and Management 249 (2007) 45-53.

T. Ingold, Being Alive: Essays On Movement, Knowledge and Description*.* Routledge, London and New York (2011).

J. E. Innes, Consensus building: Clarifications for the critics, Planning Theory 3 (1) (2004) 5-20.

G. Jaegersberg, J. Ure, Barriers to knowledge sharing and stakeholder alignment in solar energy clusters: Learning from other sectors and regions, Journal of Strategic Information Systems 20 (4) (2011) 343-354.

H. Kahn, On Thermonuclear War, Princeton University Press, Princeton, New Jersey (1962).

H. Kahn, A. J. Wiener, The Year 2000: *A Framework for Speculation on the Next Thirty-Three Years.* The Macmillan Company, New York (1967).

M. van de Kerkhof, Making the difference: On the constraints of consensus building and the relevance of deliberation in stakeholder dialogues, Policy Sciences 39 (2006) 279-299.

J. Kounis, M. Beeman, The Eureka Factor: Creative Insights and the Brain, Windmill Books, Penguin/Random House, London (2015).

E. Kriegler, B. C. O'Neill, S. Hallegate, T. Kram, R. J. Lempert, R. H. Moss, T. Wilbanks, The need for and use of socio-economic scenarios for climate change analysis: A New approach based on shared socio-economic pathways, Global Environmental Change 22 (4) 2012 817-822.

T. Kuhn, A communicative theory of the firm: Developing an alternative perspective on intra-organizational power and stakeholder relationships, Organization Studies 29 (2008) 1227-1254.

S. Kuhlman, Future governance of innovation policy in Europe – three scenarios, Research Policy 30 (2001) 953-976.

P. Le Roux, V. Maphai, The Mont Fleur scenarios, Deeper News (1992).

R. J. Lempert, M. E. Schlesinger, Robust strategies for abating climate change, Climate. Change. 45 (3/4) (2000) 387-401.

S. O. Lilienfeld, I. Kirsch, T. R. Sarbin, S. J. Lynn, J. F. Chaves, G. K. Ganaway, R. A. Powell, Dissociative identity disorder and the socio-cognitive model: Recalling the lessons of the past, Psychological Bulletin 125, (5) (1999) 507-523.

N. Llewellyn, The role of storytelling and narrative in a modernization initiative, *Local* Government Studies 27 (2001) 35-50.

P. Loukopoulos, R.W. Scholz, Sustainable future urban mobility: using area development negotiations for scenario assessment and participatory strategic planning, Environment and Planning A 36 (2004) 2203-2226.

N. Luhmann, The autopoiesis of social systems, in Geyer F and van der Zouwen F (Eds.), Sociocybernetics: observation, control and evolution of self-steering systems, Sage Publications Inc., London, pp 172-192 (1986).

D. J. Mackay, G. Burt, Strategic learning, foresight and hyperopia, Management Learning 46 (5) (2015) 546-564.

R. Madlener, K. Kowalski, S. Stagl, New ways for the integrated appraisal of national energy scenarios: the case of renewable energy use in Austria, Energy Policy 35 (12) (2007) 6060-6074.

J. Van Maanen, Reclaiming qualitative methods for organizational research: A preface, Administrative Science Quarterly, 24 (4) 520-526.

J. Van Maanen, The fact of fiction in organizational ethnography, Administrative Science Quarterly 24 (4) 539-550.

A. S. Mather, The changing role of planning in rural land use: The example of afforestation in Scotland, Journal of Rural Studies 7 (3) (1991) 299-309.

M. B. Miles, A. M. Huberman, Qualitative Data Analysis, Sage Publications Ltd, Thousand Oaks, CA (1994).

M. Mitchell, M. Lockwood, S. A. Moore, S. Clement, Scenario analysis for biodiversity conservation: A social-ecological system approach in the Australian Alps, Journal of Environmental Management 150 69-80.

C. Morgan-Davies, R. Wilson, T. Waterhouse, Use or delight? History of conflicting hill land uses in Scotland – A review, Scottish Geographical Journal 131 (2) (2015) 98-122.

M. Mukherjee, R. Ramirez, R. Cuthbertson, Strategic reframing as a multi-level process enabled with scenario research, Long Range Planning, 53 Article in Press (2020).

F. Munier, P. Ronde, The role of knowledge codification in the emergence of consensus under uncertainty: empirical analysis and policy implications, Research Policy 30 (9) (2001) 1537-1551.

J. Munoz-Rojas, M. Nijnik, M. Gonzalez-Puente, F. Cortines-Garcia, Synergies and conflicts in the use of policy and planning instruments for implementing forest and woodland corridors and networks: a case study in NE Scotland, Forest Policy and Economics 57 (2015) 47-64.

P. van Oosterzee, A. Dale, N. D. Preece, Integrating agriculture and climate change mitigation at landscape scale: Implications from an Australian case study, Global Environmental Change 29 (2014) 306-317.

J. R. Palmer, Biofuels and the politics of land use: Tracing the interactions of discourse and place in European policy making, Environment and Planning A 46 (2014) 337-352.

J-A. Paschen, R. Ison, Narrative research in climate change adaptation – Exploring a complementary paradigm for research and governance, Research Policy 43 (6) (2014) 1083-1092.

B. T. Pentland, Building process theory with narrative: From description to explanation, Academy of Management Review 24 (4) (1999) 711-724.

S. Pinker, The stuff of thought: Language as a window into human nature. Penguin Group, London, UK (2007).

H. Pumomo, G. A. Mendoza, R. Prabhu, Y. Yasmi, Developing multi-stakeholder forest management scenarios: A multi-agent system simulation approach applied in Indonesia, Forest Policy and Economics 7 (4) (2005), 475-491.

R. Ramirez, S. Churchhouse, A. Palermo, J. Hoffman, Using scenario planning to reshape strategy: Rather than trying to predict the future, organizations need to strengthen their ability to cope with uncertainty. A new approach to scenario planning can help organizations reframe their long-term strategies by developing several plausible scenarios, Sloan Management Review 58 (4) (2017) 31-37.

S. Raum, C. Potter, Forestry paradigms and policy change: The evolution of forestry policy in Britain in relation to the ecosystem approach, Land Use Policy 49 (2015) 462-470.

O. Renn, Participatory processes for designing environmental policies, Land Use Policy 23, (2006) 34-43.

J. Reynolds, Re-wiring the economy, then tasks, ten years. Cambridge Institute for Sustainability Leadership, University of Cambridge (2015).

M. Riley, How does longer term participation in agri-environmental schemes [re]shape farmers' environmental dispositions and identities? Land Use Policy 52 (2016) 62-75.

G. Ringland, The role of scenarios in strategic foresight, Technological Forecasting & Social Change 77 (9) (2010) 1493-1498.

G. Ringland, M. Edwards, L. Hammond, B. Heinzen, A. Rendell, O. Sparrow, E. White, Shocks and Paradigm Busters (Why Do We Get Surprised?), Long Range Planning, 32 (4) (1999) 403-413.

G. B. Rossman, S. F. Rallis, Learning in the field: An introduction to qualitative research. Sage Publications Limited, London (1998).

J. Sandberg, H. Tsoukas, Grasping the logic of practice: Theorizing through practical rationality, Academy of Management Review 36 (2) (2011) 338-360.

Scottish Government, Climate Change (Scotland) Act 2009.

Scottish Government, Low carbon Scotland: Meeting the emissions reduction targets 2013-2017. The second report on proposals and policies (2013).

Scottish Government, *Ambition, Opportunity, Place: Scotland's Third national Planning Framework* (2014).

D. Silverman, *Interpreting qualitative data: Methods for analysing talk, text and interaction*. Sage Publications Ltd, London (2013).

L. Sing, W. Towers, J. Ellis, Woodland expansion in Scotland: an assessment of the opportunities and constraints using GIS, Scottish Forestry 67 (2013) 18-25.

B. Slee, The socio-economic evaluation of the impact of forestry on rural development: a regional level analysis, Forest Policy and Economics 8 (2006) 542-554.

C. Soderberg, Complex governance structures and incoherent policies: Implementing the EU water framework directive in Sweden, Journal of Environmental Management 183 (2016) 90-97.

A. Sokolov, N. Veselitskaya, V. Carabias, O. Yildrum, Scenario-based identification of key factors for smart cities development, Technological Forecasting & Social Change 148 (2019).

L. Soste, Q. J. Wang, D. Robertson, R. Chaffe, S. Handley, Y. Wei, Engendering stakeholder ownership in scenario planning, Technological Forecasting & Social Change 91 (2015) 250-263.

G. Spencer Brown, *Laws of Form*, George Allen and Unwin Ltd, London (1969).

A. Spickermann, V. Grienitz, H. von der Gracht, Heading towards a multimodal city of the future? Multi-stakeholder scenarios for urban mobility, Technological Forecasting & Social Change 89 (2014) 201-221.

C. L. Splash, Aslaksen, I. Re-establishing an ecological discourse in the policy debate over how to value ecosystems and biodiversity, Journal of Environmental Management 159 (2015) 245-253.

W. H. Starbuck, F. J. Milliken, Challenger: Changing the odds until something breaks, Journal of Management Studies 25 (1988) 319-340.

A. L. Strauss, J. M. Corbin, *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, Sage Publications Ltd, Newbury Park, CA. (1998).

H. J. D. Thomas, J. S. Paterson, M. J. Metzger, L. Sing, Towards a research agenda for woodlands expansion in Scotland, Forest Ecology and Management 349 (2015) 149-161.

M-A. Tremblay, The key informant technique: A non-ethnographic application, in: R.G. Burgess (Ed.), *Field Research: a Sourcebook and Field Manual*. Routledge, London. pp 98-104 (1982).

H. Tsoukas, A dialogical approach to the creation of new knowledge in organizations, Organization Science 20 (6) (2009) 941-957.

G. Valatin, J. Starling, *Valuation of ecosystem services provided by UK woodlands*. UK NEA Economic Analysis Report (2010).

E. Vaara, S. Sonenshein, D. Boje, Narratives as Sources of Stability and Change in Organizations: Approaches and Directions for Future Research, Academy of Management Annals 10 (1) (2016) 495-560.

A. Volkery, T. Riberio, Scenario planning in public policy: Understanding use, impacts and the role of institutional context factors, Technological Forecasting & Social Change, 76 (9) (2009) 1198-1207.

D. P. van Vuuren, K. Riahi, R. Moss, J. Edmonds, A. Thomson, N. Nakicenovic, T. Kram, F. Berkhout, R. Swart, A. Janetos, S. K. Rose, N. Arnell, A proposal for a new scenario framework to support research and assessment in different climate research communities, Global Environment Change 22 (2012) 21-35.

P. Wack, Scenarios: uncharted waters ahead. How Royal Dutch/Shell developed a planning technique that teaches managers to think about an uncertain future, Harvard Business Review Sept-Oct (1985a) 73-89.

P. Wack, Scenarios: shooting the rapids. How medium-term analysis illuminated the power of scenarios for Shell management, Harvard Business Review Nov-Dec (1985b) 139-150.

J. Warth, H. A. von der Gracht, I-L. Darkow, A dissent-based approach for multi-stakeholder scenario development – The future of electric drive vehicles, Technological Forecasting & Social Change 80 (2013) 566-583.

C. Warren, Occupying the middle ground: The future of social land ownership in Scotland, *ECOS Magazine*, Volume 23(1) (2002) caledonia.org.uk.

G. Watt, *The Referendum: Seeing the EU through the Trees*. Confederation of Forestry Industry (2016).

K. Weick, Theory and practice in the real world, in H. Tsoukas and C. Knudsen (eds) The Oxford Handbook of Organization Theory: Meta-theoretical Perpsectives, Oxford University Press, Oxford pp 453-473 (2003).

A. N. Whitehead, Process and Reality, The Free Press, New York (1929/1978).

R. Whittington, Completing the practice turn in strategy, Organization Studies 27 (2006) 613-634.

D. Wright, B. Stahl, T. Hatzakis, Policy scenarios as an instrument for policymakers. *Technological Forecasting & Social Change* 154 (2020) (AinP)

A. Wightman, *Who Owns Scotland*. Canongate, Edinburgh (1996).

L. K. Woolsey, The critical incident technique: An innovative qualitative method of research, Canadian Journal of Counselling and Psychotherapy 20 (4) (1986) 242-254.

Woodland Expansion Advisory Group. *Report to the Cabinet Secretary for Rural Affairs and Environment,* Richard Lochhead MSP (2012).

C. Wyborn, Co-productive governance: A relational framework for adaptive governance, Global Environmental Change 30 (2015) 56-67.

W-N. Xiang, K.C. Clarke, The use of scenarios in land-use planning, Environment and Planning B 30 (6) (2003) 885-909.

K. Yang, K. Callahan, Citizen Involvement Efforts and Bureaucratic Responsiveness: Participatory Values, Stakeholder Pressures, and Administrative Practicality, Public Administration Review 67 (2) (2007) 3249-264.

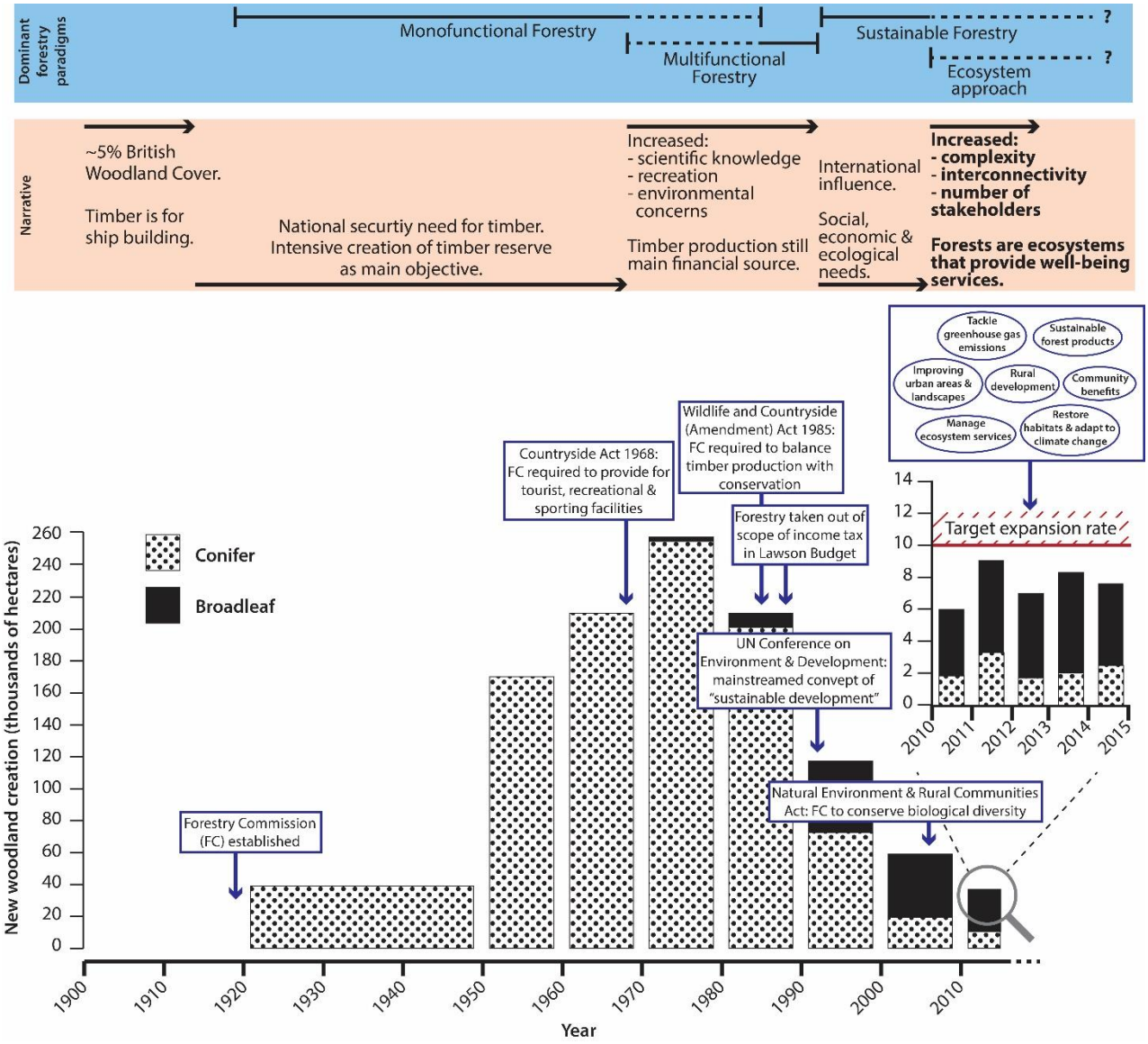

Figure 1. Forestry Paradigms and key policy influences, based on Raum and Potter (2015) and Forestry Commission Scotland (2009). The histogram shows total area of new woodland creation within the time period indicated (data is taken from Woodland Expansion Advisory Group (2012) and Forestry Commission (2015)).

Figure 1: Evolution of Forestry Paradigms

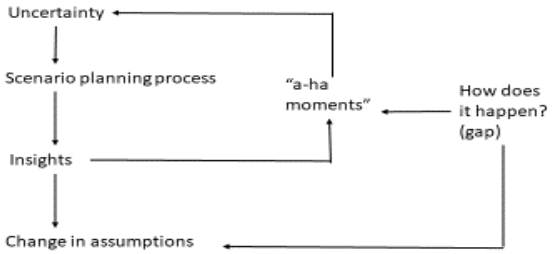

Figure 2: Extant theory in literature

Figure 2: Extant theory in the literature

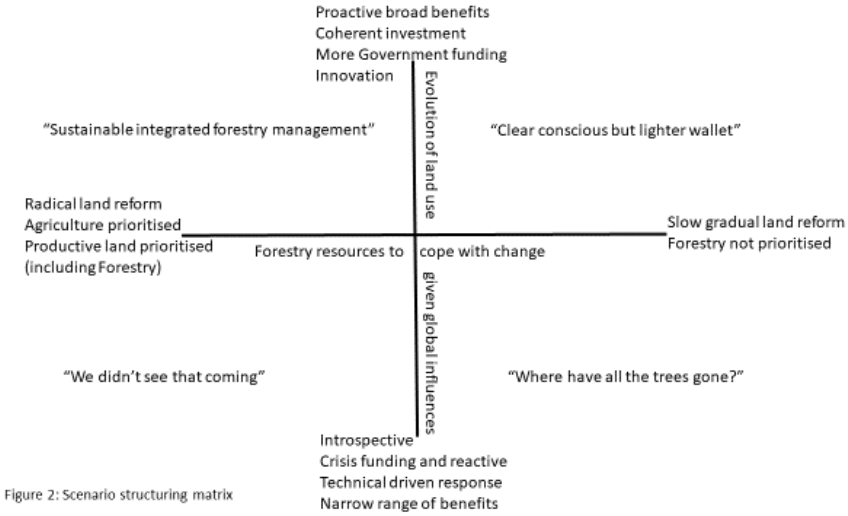

Figure 2: Scenario structuring matrix

Figure 3: Scenario structuring matrix

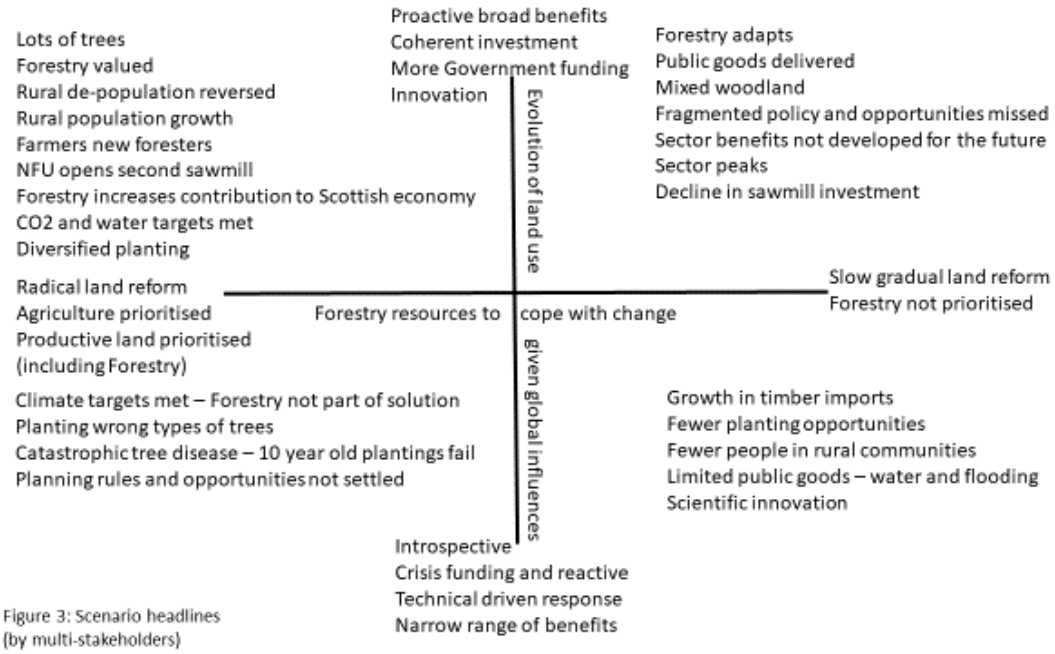

Figure 3: Scenario headlines
(by multi-stakeholders)

Figure 4: Scenario headlines from multi-stakeholder workshop

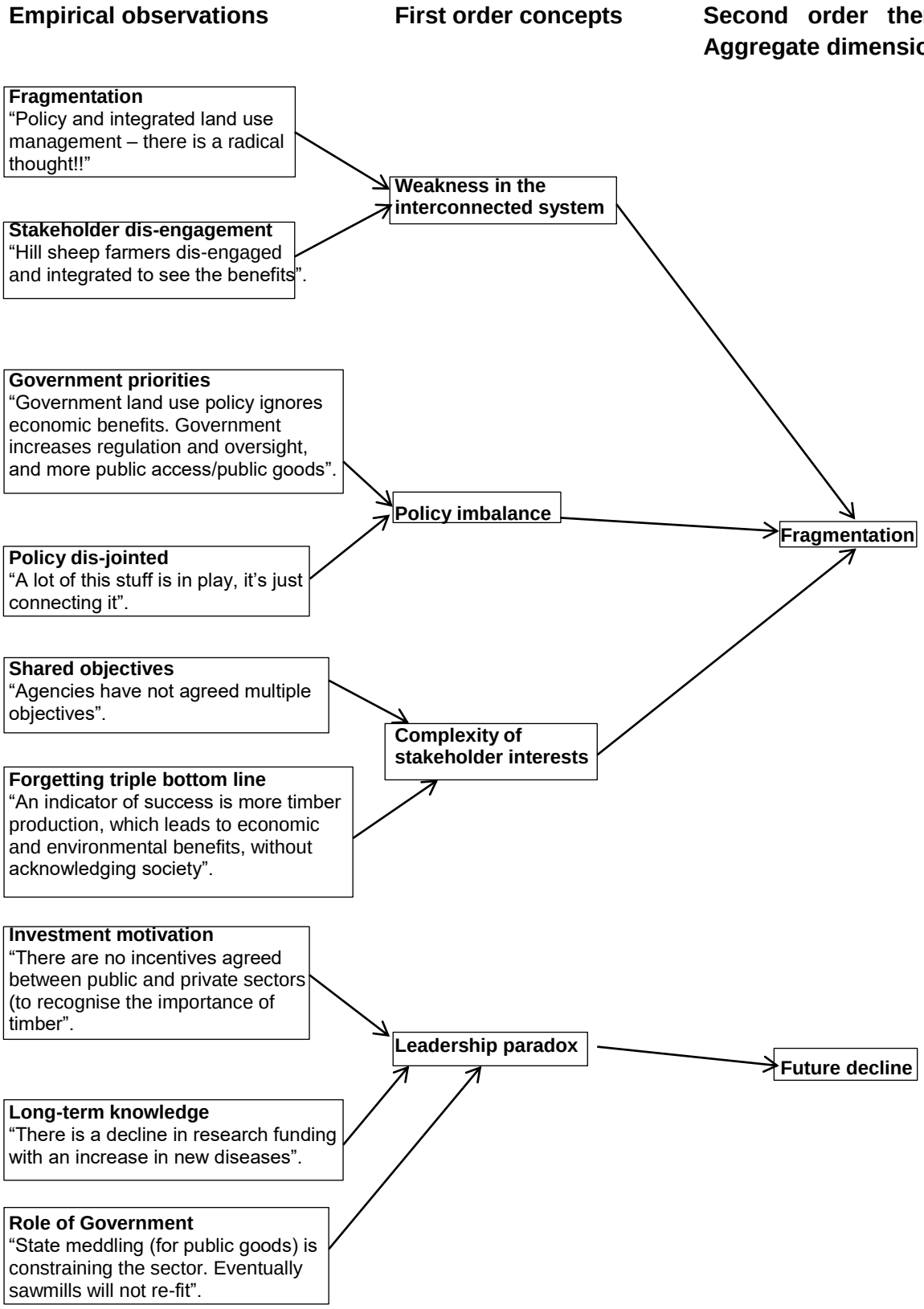

Figure 5: Data Structure summarising the coding / analysis

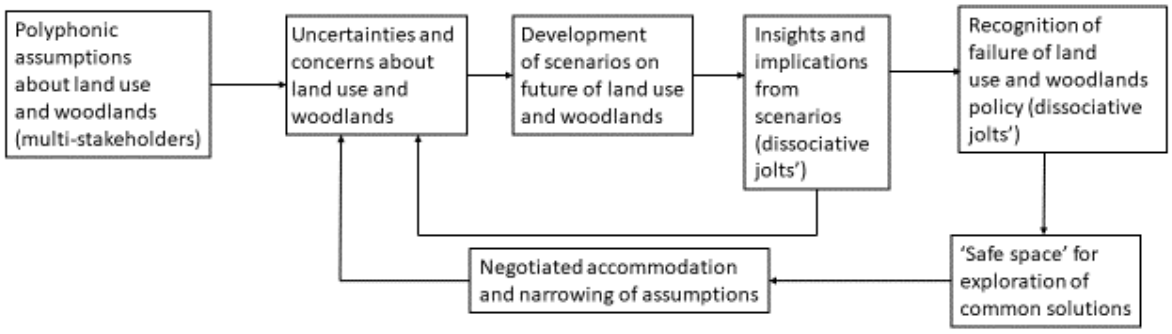

Figure 6 – Dissociative jolts trigger and reaction

Figure 6: Dissociative jolts as 'trigger'

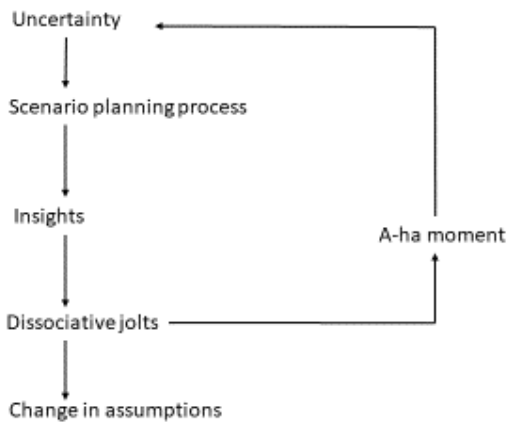

Figure 7: Theoretical contribution

Figure 7: Theoretical contribution

George Burt
George Burt is Professor of Strategy at Stirling Management School, and is programme director for the Stirling MBA. Research is conducted on the relational processes of sense-making, strategizing and changing to understand the process of organisational foresight and (un)learning. Research is published in journals such as British Journal of Management, Technological Forecasting & Social Change and Management Learning.

David Mackay
David Mackay is Professor of Practice at Strathclyde Business School. Research explores the practices of dynamic managerial capabilities (e.g. how managers might influence strategic renewal, organisational innovation and change processes), as well as the potential and pitfalls of strategy and innovation. Research is published in journals such as Organisational Research Methods, International Journal of Management Reviews, Technological Forecasting & Social Change and Management Learning.

Kepa Mendibil
Kepa Mendibil is a Principal Teaching Fellow. As part of this role he supports the development of a full range of business engagement programmes including executive education, collaborative research and business consultancy projects for postgraduate students. Research is focused on the role of management innovation in improving the performance, resilience and sustainability of organisations. Research is published in R&D Management, Production, Planning & Control and Creativity and Innovation Management.