

Structuration theory: the contribution of Norman Macintosh and its application to emissions trading

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Abstract

This paper examines the contribution of Norman Macintosh to the development of structuration theory which is then used to investigate accounting and the European Union emissions trading system (EU ETS). The research of Norman Macintosh demonstrated the potential of structuration theory as a sensitizing device for management accounting research by illustrating how accounting represents the dimensions of signification, legitimation and domination as well as the ethics of profit manipulation using the dialectic of control. He also demonstrated the role of agency in changing management accounting systems (MAS), which represent a source of ontological security, as well as the role of methodological bracketing. Extending the critical perspective of the work of Norman Macintosh, the investigation of accounting and the EU ETS using structuration theory demonstrated how the EU ETS and the financial reporting interpretation for emission rights, IFRIC 3, represented the dimensions of signification, legitimation and domination. A structural contradiction resulting in measurement mismatches, tension between two moral stances and resource allocation problems led to the withdrawal of IFRIC 3, which has resulted in the IASB and the FASB forming a coalition to develop guidance on accounting for ETS.

Keywords: Norman Macintosh; Structuration theory; Management accounting systems; Methodological bracketing; Emissions trading; Unintended consequences; Structural contradiction

1. Introduction

This paper provides an overview of the contribution of Norman Macintosh to the development of structuration theory, which is then used as a sensitizing device to analyse the introduction of the European Union emissions trading system (EU ETS) and the associated accounting interpretation, IFRIC 3. The research of Norman Macintosh, Robert Scapens and John Roberts developed structuration theory (Giddens, 1976, 1979, 1984) as a theoretical framework that enables management accounting research to include social and political phenomena for the purpose of understanding accounting practices (Macintosh & Scapens, 1990, 1991; Roberts & Scapens, 1985). Specifically, Norman Macintosh has used structuration theory to analyse accounting and control systems as well as organizational change (Macintosh, 1994; Macintosh & Scapens, 1990; 1991), profit manipulation (Macintosh, 1995), the need for methodological brackets (Scapens & Macintosh, 1996) as well as the use of ethnographic research studies (Jönsson & Macintosh, 1997). In addition, the work of Norman Macintosh and Robert Scapens was the focus of a methodological debate in structuration theory (Macintosh & Scapens, 1990; Boland, 1993; Scapens & Macintosh, 1996; Boland, 1996).

The IASB has recognized that the use of, and interest in, ETS has continued to grow worldwide, resulting in a demand for consistent and transparent accounting treatment (IASB, 2007a, 2007b). To date, ETS research has focused upon accounting issues (Bebbington & Larrinaga-González, 2008; Engels 2009), policy networks (Braun, 2009), valuation of allowances (Johnston et al., 2008), carbon disclosure (Kolk et al., 2008), and carbon markets (MacKenzie, 2009). Whilst research into ETS is a developing area, the

IASB believes that there is little guidance with a resulting gap in international accounting literature on ETS (IASB, 2007b), where Hopwood (2009) believes the likelihood of fraud, manipulation and a range of unanticipated consequences is very real, with a resulting need for a questioning and critical approach of the actions and consequences associated with ETS. Structuration theory can sensitize researchers as to how the development of ETS was shaped by contradiction, conflict and unintended consequences.

Critical research of the EU ETS can be undertaken from a variety of paradigms such as interpretist, radical structuralist, radical humanist and post modernist (Macintosh & Scapens, 1990), the focus of which would be on ETS as either a structure or a process. Structuration theory links structure to agency and in the process illustrates the interaction of structures of signification, legitimation and domination (Macintosh, 1994; Scapens & Macintosh, 1996; Granlund, 2003) that have developed from the EU ETS and IFRIC 3, therefore explaining how their development was shaped by the role of agents, or individuals, in critical situations that were characterized by conflict, contradiction and unintended consequences, similar to the approach of Conrad (2005) and Tollington (2006). This approach can therefore examine the interrelationship between how organisations manage and disclose their carbon emissions (Bebbington & Larrinaga-González, 2008), and provide a “road map” for ETS researchers wishing to focus in detail on particular elements of structuration theory (Macintosh & Scapens, 1991) by informing research at the signification level using Gadamer’s hermeneutics, at the domination level using the work of Weber, and at the legitimation level using the theories of members of the Frankfurt School of Social Philosophy (Scapens & Macintosh, 1996).

In order to critique and analyze the contributions of Norman Macintosh to structuration theory, and to use this work as a starting point for analysing the introduction of the EU ETS and IFRIC 3, this paper seeks to address the following questions:

1. What has been the contribution of Norman Macintosh to the development of structuration theory and its methodological approaches within management accounting?; and
2. How can the introduction of the EU ETS and the associated accounting interpretation, IFRIC 3, be analysed using structuration theory as a sensitizing device?

The paper is structured as follows. The next section provides an overview of structuration theory and its methodological issues, with an emphasis upon the contribution of Norman Macintosh. The third section examines the accounting systems associated with the EU ETS and IFRIC 3. The fourth section uses structuration theory as a sensitizing device to understand the interconnection of structures resulting from the EU ETS and IFRIC 3. The final section provides a discussion and concluding comments.

2. Structuration theory – the contribution of Norman Macintosh

Norman Macintosh contributed to the development of structuration theory through case studies of the University of Wisconsin, General Motors (GM) and the Department of Defence (DoD)¹ (Macintosh & Scapens, 1990, 1991), developing a framework of management accounting systems (MAS) that incorporates signification, domination and legitimation (Macintosh, 1994), analysing profit manipulation using the “dialectic of control” (Macintosh, 1995), as well as discussing the need for methodological bracketing

(Scapens and Macintosh, 1996). Scapens (2006) explained that this work emphasized the importance of studying how MAS develop over time as well as understanding the organisational and social context in which they are embedded.

2.1 The development of structuration theory as a sensitizing device

Structuration theory, which is the conditions governing the continuity or transformation of structures, and the reproduction of systems (Giddens, 1976, 1979, 1984), was first developed by Anthony Giddens as a sensitizing device for the purposes of thinking about, as well as interpreting, research problems and their results (Giddens, 1984). Norman Macintosh first demonstrated its potential as a sensitizing device in the case of GM, where simultaneous changes in structures of signification, legitimation and domination enabled an accounting discourse to replace an engineering discourse in a critical situation (Macintosh & Scapens, 1991; Macintosh, 1994). Its subsequent potential as a sensitizing device was demonstrated by Lawrence et al., (1997), who illustrated the structures of signification, legitimation and domination before and after the reforms of the N.Z. health system, Conrad (2005), who identified the main structures of signification, legitimation and domination underlying the privatization of British Gas, U.K. agriculture (Jack, 2005), intangible assets (Tollington, 2006) and public sector reform in less developed countries, where Uddin and Tsamenyi (2005) used the dialectic of control in order to understand budgeting and performance measurement.

The central component of structuration theory is the duality of structure, where agents simultaneously reproduce or change structures of signification, legitimation and domination² by drawing upon the ‘modalities’³ of structuration, interpretive schemes,

normative rules, authoritative and allocative resources (Giddens, 1979, 1984). These structures exist in “virtual time and space” and are drawn upon by agents in “specific time-space settings” (Macintosh, 1994, p.179). For example, structures, such as language, exist in a virtual time and space location, whilst, human action or interaction, such as speech, is always situated in a specific time and space (Roberts & Scapens, 1985; Conrad, 2005; Englund & Gerdin, 2008). It is through the duality of structure that structuration theory seeks to incorporate radical structuralism⁴, where social life is determined by structures, and radical humanism⁵, where social life is a product of the agent’s subjective choice-making, within a single framework (Hopper & Powell, 1985; Macintosh & Scapens, 1990; Macintosh, 1994).

2.2 *System and structure*

Structuration theory distinguishes between system and structure. Systems are the similar social practices or visible patterns that are reproduced across time and space by human agents, whilst structures are the rules and resources that bind these practices into systems, which in turn are continuously reproduced (Giddens 1979, 1984; Roberts and Scapens, 1985⁶; Macintosh & Scapens, 1990). The reproduction of structures are conditions of human action or agency, the result of which is unintended consequences (Giddens, 1979; Granlund, 2003). For example, the change to the budget discourse by the University of Wisconsin resulted in unintended consequences, the subsidizing of a large lump sum payment and the star faculty fund (Macintosh & Scapens, 1990). Subsequent examples of unintended consequences occurred in the cases of public accounting (Yuthas et al., 2004), the demerging of British Gas (Conrad, 2005) and the development of gross margin accounting (Jack, 2005).

A structural contradiction occurs where the modalities of structuration have rules that work against each other⁷ (Boland, 1993), such as the budget process within the University of Wisconsin⁸ (Macintosh & Scapens, 1990). Macintosh (1995) explained that these can be either primary, which are essential to the social system, or secondary, such as the dialectic of control, which are a consequence of primary contradictions. In the New Zealand health care system, there was no signification structure that specialists could call upon in order to make the computer schemes operational, which enabled doctors to resist the introduction of resource utilization systems, an example of system contradiction (Lawrence et al., 1997).

2.3 Structuration theory and management accounting systems – the research of Norman Macintosh

Anthony Giddens identified that social systems comprise three structural dimensions: signification, domination and legitimation (Giddens, 1984). Norman Macintosh and Robert Scapens were the first Accounting scholars to argue that MAS⁹ represent the dimensions of signification, legitimation and domination (Macintosh & Scapens, 1990; Scapens & Macintosh, 1996). Subsequent to Macintosh and Scapens (1990), the role of accounting in these dimensions was evident in the cases of New Zealand health (Lawrence, et al., 1997), intangible assets (Johanson et al., 2001; Tollington, 2006), performance measurement (Ahrens & Chapman, 2002), environmental reporting (Buhr, 2002), management control (Scheytt et al., 2003), enterprise resource planning systems (Caglio, 2003), supply chain practices (Seal et al., 2004), British Gas (Conrad, 2005), the Electricity Trust of South Australia (Gurd 2008) and UK food and agriculture (Jack, 2005, 2007).

2.3.1 Signification

Anthony Giddens explained that signification structures are structures of meaning which are reproduced by agents drawing upon interpretative schemes (Giddens, 1979). Norman Macintosh first argued that MAS are signification structures because they are interpretive schemes, such as assets, liabilities, revenues, expenses, return-on-investment and profit which enable managers to make sense of, as well as communicate about, organizational activities (Macintosh & Scapens, 1990; Macintosh, 1994, 1995). For example, agents at the University of Wisconsin were able to reproduce a signification structure, a budgeting discourse, through an interpretative scheme, the Enrolment Funding Formula (EFF) (Macintosh & Scapens, 1990), whilst at GM, an engineering signification structure was replaced with an accounting structure, enabling managers to make sense of day to day activities through accounting (Macintosh & Scapens, 1991). Within the DoD, Uniform Cost Accounting (UCA) was an interpretive scheme (Macintosh & Scapens, 1991), whilst the ETSA replaced an engineering signification structure with a business signification structure because it changed to being a profit focused organization (Gurd, 2008).

2.3.2 Legitimation

The second dimension of structuration is legitimation, the theory of normative regulation (Giddens, 1979, 1984), or the moral constitution of social action (Richardson, 1987; Macintosh & Scapens, 1990, 1991; Macintosh, 1994). Norman Macintosh explained that MAS represent structures of legitimation because they embody organizational norms that provide the moral underpinnings for signification and domination (Macintosh & Scapens, 1990; Macintosh, 1994). For example, UCA was used legitimate claims of budget control

by the DoD, whilst profit seeking was embedded in the signification structure at GM (Macintosh & Scapens, 1991). Chua (1986) would argue that accounting is useful for legitimation activities because it possess a neutral and technical rationality. However, in the case of the ETSA, the shift to financial outcomes as a way of legitimising behaviour was resisted because of its impact upon employees (Gurd, 2008).

2.3.3 Domination

The third dimension of structuration is domination, or power, the exercise of which is dependent upon authoritative and allocative resources (Giddens, 1979, 1984). These are both enabling and constraining, as power works to both constrain individuals as well as to gain their cooperation (Macintosh, 1994). The role of agency in power refers to the power of human action to transform the social and material world (Roberts & Scapens, 1985). Norman Macintosh explained that MAS are an authoritative resource and therefore a structure of domination because they determine who is responsible to whom and therefore accountable (Macintosh, 1994), such as the University of Wisconsin, where the State used the EFF to retain power over the allocation of funds (Macintosh & Scapens, 1990) and GM, where administrative officers became responsible for financial performance (Macintosh & Scapens, 1991).

2.3.3.1 The dialectic of control – the research of Norman Macintosh

Anthony Giddens (1984) defined the dialectic of control as how the less powerful manage resources in order to exert control over the more powerful. For example subordinates are able to exercise power by withholding information from their superiors, creating a structural contradiction (Macintosh & Scapens, 1990; Macintosh, 1994, 1995; Scapens & Macintosh, 1996). The dialectic of control was first illustrated by Macintosh

and Scapens (1990), where the University of Wisconsin drew upon its available resources to change the budget discourse, whilst Macintosh (1995) used it as a sensitizing device to explain that business component managers exercise power over upper level executives by manipulating profits. Subsequent to Macintosh (1995), it has been applied to illustrate the use of e-mail to resist audit automation (Manson et al., 2001), local government budgeting systems (Seal, 2003), cultural differences and their impact upon relationships between controllers and subordinates (Scheytt et al., 2003), the influence of accounting policy choices upon regulatory decision making (Conrad, 2005), autonomy-dependency relationships between the State and the Ghana Food Distribution Corporation (Uddin & Tsamenyi 2005), the Accounting Standards' Board consultation process (Tollington, 2006) and the relationship between farmers, governments and supermarket supply chains (Jack, 2007).

2.4 Agency, ontological security and the reshaping of structures

Structuration theory expresses the mutual dependence of structure and agency, which is the intentional actions of self-conscious individuals to reflexively monitor their own and others' actions in social settings (Macintosh & Scapens, 1991; Macintosh, 1994), also known as the reflexive monitoring of conduct or action (Giddens, 1979). At the practical level of consciousness, agents rely upon implicit stocks of knowledge, such as interpretative schemes, accounting methods and performance measurement systems (Macintosh, 1994; Jack, 2005), about how to act and interpret the actions of others (Macintosh & Scapens 1990, 1991; Macintosh, 1994). As a result, structures have no existence independent of the stocks of knowledge of agents (Giddens, 1984). Boland

(1996) would argue that having a common stock of knowledge enables the dynamic potential of language-games to make and remake meanings.

In a routine situation, agents, at the practical level of consciousness, reproduce existing systems and therefore structures because they are motivated by an unconscious need for ontological security (Giddens, 1984; Macintosh & Scapens, 1990; Macintosh, 1994; Buhr, 2002), which is “the implicit faith” that they have in the codes of signification and normative regulation (Giddens, 1979, p.219) Ontological security is developed during an infant’s pre-linguistic stage in order to cope with anxiety and is sustained through routines (Busco et al., 2006). Norman Macintosh demonstrated that MAS, such as the University of Wisconsin budgeting system, are a vital source of ontological security because they conform to a predetermined timetable that has a regular reporting routine (Macintosh & Scapens, 1990), whilst a managers’ unconscious motivation for ontological security can result in the rapid acceptance of a new system of management control, such as in the case of GM (Macintosh & Scapens, 1991). Subsequent to Macintosh and Scapens (1990, 1991), Buhr (2002) observed that the production of an environmental report may be due to a manager’s motivation to create and recreate a new sense of ontological security¹⁰, whilst Busco et al., (2006) observed that trust is found in the deepest layer of ontological security and that MAS and feelings of trust for change can be mutually reinforcing¹¹.

In contrast to a routine situation, a critical situation is a set of circumstances which radically disrupts and challenges routines (Giddens, 1979; Macintosh & Scapens, 1990; Macintosh, 1994; Busco et al., 2006), resulting in agents relying upon their ‘discursive

consciousness' (Giddens, 1979). This is where they give reasons for and rationalize about what that they do (Macintosh, 1994) as their ontological security is replaced by "heightened anxiety" (Giddens, 1979, p.127).

Norman Macintosh observed that in a critical situation, agents often reshape and change existing MAS (Macintosh & Scapens, 1990; Macintosh, 1994). For example, the GM executives, acting as self-conscious agents with discursive and practical consciousness, put in place a new social order with an emphasis upon individualism (Macintosh & Scapens, 1991), whilst Buhr (2002) illustrated the role of agency in initiating and producing an environmental report at two Canadian pulp and paper companies. In the case of a pharmaceutical company, Caglio (2003) examined the role of the Chief Financial Officer in enabling "a new configuration in the distribution of power" that emphasized the role of the accounting.

2.5 *Structuration theory – methodological considerations*

Because structuration theory is concerned with the interconnection between agency and structure (Baxter & Chua, 2003; Dillard et al., 2004), Anthony Giddens developed two different methodological approaches: (1) institutional analysis; and (2) the analysis of strategic conduct (Giddens, 1984). Institutional analysis places a focus upon structure as it treats structures as the reproduced features of social systems whilst the analysis of strategic conduct emphasizes agency as it places a focus upon the modalities in which agents draw upon structural properties (Giddens, 1979, 1984). The difference between the two approaches was explained by Scapens and Macintosh (1996), who observed that institutional analysis focuses on the rules and resources that 'bind' systems, whilst the

analysis of strategic conduct concentrates upon how agents draw upon those rules and resources in the process of interaction.

Norman Macintosh contributed to the methodological considerations of structuration theory through the debate between Scapens and Macintosh (1996) and Boland (1996). This debate originated in the research of Macintosh and Scapens (1990)¹² and Boland (1993), who sought to reveal the interpretive power of the individual agent by looking more closely at individual agents as they read management accounting reports. Boland (1993) argued that the analysis by Macintosh and Scapens did not portray the individual agent engaging in the responsible creation of meaning and used the Milne experiments to justify the argument that managers are more potent and inventive creators of meaning. In response, Scapens and Macintosh (1996) argued that different methodological brackets can explain the differences between the two papers as Macintosh and Scapens (1990) were primarily interested in institutional analysis, whilst Boland (1993) was more concerned with the analysis of strategic conduct. Scapens and Macintosh (1996, p.684) argued that institutional analysis is needed to complement the analysis of strategic conduct in order to explore how accounting statements are understood and accepted by managers, as well as highlight that accounting practices are at their “most powerful when managers take accounting statements for granted”. Boland (1996) responded that an important indicator of the difference between the two positions was the expectation of Scapens and Macintosh that an individual’s interpretations should reflect an institutional level belief system. Jones and Dugdale (2001) argued that this debate demonstrated that any transformation which aims to replace the “dualisms” of structure and agency with a “duality” may be difficult to achieve and that the resulting challenge is to continually

hold structure and agency in view at the same time. To achieve this, Jones and Dugdale (2001) developed the concept of an accounting regime¹³.

Subsequent to Jones and Dugdale (2001), Englund and Gerdin (2008) argued that regardless of the methodological approach adopted, researchers need to distinguish the situated actions of individuals from the underlying principles that guide and constrain their actions¹⁴. However, Scapens and Macintosh (1996) emphasized that the central feature of structuration theory remains the link between agency and structure.

2.6 Structuration theory – the contribution of Norman Macintosh

Norman Macintosh first demonstrated the potential of structuration theory as a sensitizing device in the cases of the University of Wisconsin, GM and DoD, specifically the interconnection of structures of signification, legitimation and domination within MAS and how they are reproduced and changed in routine and critical situations respectively (Macintosh & Scapens, 1990, 1991; Macintosh, 1994). In the process, he highlighted that MAS comprise structures of signification, domination and legitimation that are interpretative schemes which make sense of organizational activities, embody the norms of organizational activity as well as being an authoritative resource (Macintosh and Scapens, 1990; Macintosh, 1994).

With reference to domination, Norman Macintosh applied the dialectic of control as a sensitizing device to explain the ethics of profit manipulation (Macintosh 1995), which, in contrast to his earlier studies, focused on the role of financial controls in the production of morally correct behaviour and the resulting reproduction of structures of signification legitimation and domination. Norman Macintosh also demonstrated that

agents can change MAS in a critical situation because their ontological security is replaced by anxiety (Macintosh & Scapens, 1990, 1991; Macintosh, 1994). He subsequently demonstrated that MAS represent a source of ontological security because of their regular and predetermined reporting patterns, whilst the unconscious motivation for ontological security can support the rapid acceptance of new MAS (Macintosh & Scapens, 1990, 1991).

The research of Macintosh and Scapens (1990), and subsequently Boland (1993), was the focus of a debate between Scapens and Macintosh (1996) and Boland (1996). Scapens and Macintosh (1996) argued that because agency and structure are two essential elements of structuration theory, two methodological approaches are needed, institutional analysis and the analysis of strategic conduct, in order to analyse situated social activities, that is, analyse structure and agency separately.

3. Emissions Trading Systems – key concepts and practices

The paper will now focus upon illustrating the role of structuration theory as a sensitizing device by examining the interconnection of structures of signification with structures of legitimation and domination resulting from the EU ETS, which was introduced in 2005, and IFRIC 3, which was introduced in December 2004 and subsequently withdrawn in June 2005. In order to distinguish between system and structure, this section provides an overview of the associated practices and therefore ‘systems’ of the EU ETS, Directive 2003/87/EC, and the accounting interpretation, IFRIC 3. In order to focus on the virtual structures that are the unintended outcome of the EU ETS and IFRIC 3, section 4 then explains how both the EU ETS and IFRIC 3 have represented the modalities of

structuration in the dimensions of signification, legitimation and domination since their introduction in 2005, and then uses structuration theory as a sensitizing device to examine the reasons for the withdrawal of IFRIC 3 in June 2005.

Section 4 adopts an institutional analysis approach by focusing upon the impact of ETS on “the rules and resources” that ‘bind’ social systems (Scapens & Macintosh, 1996). Consistent with Scapens and Macintosh (1996), it seeks to acknowledge the social and institutional dimensions that are associated with the EU ETS and IFRIC 3 and their subsequent impact upon the stocks of knowledge and ontological security of agents such as accountants.

3.1 Emissions trading systems

Emissions trading systems (ETS) were an integral part of the Kyoto Protocol¹⁵ and are designed to achieve a reduction of greenhouse gases through the use of tradeable emission permits (IASB, 2008), based on the assumption that those who are most able to reduce emissions will do so first at lower cost, followed by those whose reductions are more expensive (Bebbington & Larrinaga-González, 2008). They comprise two types: (1) ‘cap and trade’ and (2) ‘project-based’ (MacKenzie, 2009). Emission permits seek to price emissions through either a direct cost, such as the purchase of allowances to emit greenhouse gases, or an opportunity cost, such as the sale of allowances that are not used to cover emissions, or the earning of credits if emissions are reduced (Mackenzie, 2009).

A ‘cap and trade’ ETS involves the creation and allocation by governments of “permits” or rights that allow the holder to emit a specified volume of greenhouse gases (CPA,

2008; FEE, 2005; IASB, 2008; Garnaut, 2008). It is characterized by: (1) the government sets emission reduction targets; (2) businesses report their emissions to the government; (3) the government then uses its emission reduction targets and data to either allocate¹⁶ or auction¹⁷ emission permits; and (4) if a participant's net emissions is likely to be less than that allowed by permits, it can either sell their excess permits or bank them for future use (CPA, 2008). Emission permits seek to create value as there is a limit or cap on the number that can be allocated, which creates the scarcity required for a trading market (CPA, 2008; FEE, 2005; Garnaut, 2008).

3.2 Directive 2003/87/EC – the establishment of the EU ETS

Directive 2003/87/EC¹⁸ of the European Parliament and the Council of the European Union¹⁹ established the European Union Greenhouse Gas Emissions Trading Scheme (EU ETS) on 1 January 2005 for the purpose of promoting reductions of greenhouse gas emissions in a cost-effective and economically efficient manner (EU 2003; FEE, 2005). The EU ETS is the largest greenhouse gas market in terms of volume of transactions and, along with the Clean Development Mechanism, which is a project based scheme, form the core of the world's carbon markets (MacKenzie, 2009). It is a mandatory 'cap and trade' scheme where installations covered by the scheme are only allowed to emit greenhouse gases if they have a permit under which they are required to monitor and report emissions, as well as surrendering, each year, allowances equal to an installation's physical emissions (FEE, 2005). If an installation keeps below its cap, it may sell or 'bank' surplus allowances, or if it exceeds its cap, it must purchase emissions allowances equal to the shortfall (FEE, 2005).

3.3 IFRIC 3

In December 2004, the IASB International Financial Reporting Interpretations Committee (IFRIC)²⁰ released IFRIC 3 Emission Rights (FEE, 2005). Whilst the Directive explained the monitoring and reporting requirements of greenhouse gas emissions associated with the EU ETS, IFRIC 3 identified the assets and liabilities that were to be recognized as a result of the EU ETS. IFRIC 3 specified that: (a) rights (allowances) are intangible assets that should be recognised in financial statements in accordance with IAS 38 Intangible Assets; (b) when allowances are issued for less than their fair value, the difference between the amount paid and fair value is a government grant that should be accounted for in accordance with IAS 20 Accounting for Government Grants and Disclosure of Government Assistance; and (c) when a participant produces emissions, it must recognise a provision for its obligation to deliver allowances in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets (FEE, 2005).

In June 2005, the IASB decided to withdraw IFRIC 3 due to a request from the European Commission (EC) so as that it could address the underlying accounting issues in a more comprehensive way than what was originally envisaged by the IFRIC (IASB, 2008).

3.4 The duality of structure with regard to emissions trading

The central component of structuration theory is the duality of structure, where agents draw upon the modalities of structuration, with the result that structures of signification, legitimation and domination are both the medium and outcome of human action. The Directive identified the following modalities that enable the ‘virtual’ structures of

signification, legitimation and domination associated with the EU ETS to be reproduced by agents in time space settings: (a) the interpretative schemes associated with the monitoring and reporting of greenhouse gas emissions; (b) the purpose, or the organizational norms, of the EU ETS, its responsible institutional body, and the guidelines or norms for the monitoring and reporting of emissions; and (c) the process for the allocation and issue of allowances as well as the reporting requirements.

Up until June 2005, IFRIC 3 identified the following modalities that enabled ‘virtual’ accounting structures of signification, legitimation and domination to be reproduced: (a) the interpretive schemes which enabled the measurement of the assets and liabilities resulting from the EU ETS; (b) the legitimacy of the accounting profession to recognize and measure assets and liabilities, which is based upon the IASB conceptual framework, from which the norms of accounting behaviour are derived; and (c) as an authoritative resource, IFRIC 3 had the same authority as a standard issued by the IASB, whilst as an allocative resource, it required organizations to recognize assets and liabilities associated with the EU ETS.

3.5 IASB Agenda Project

In December 2007, the IASB commenced its ETS agenda project due to the increasing international use of ETS and the considerable diversity in practice that had arisen in the absence of authoritative guidance (IASB, 2008). This project is expected to address whether or not tradeable permits in ETS are assets, and if so, how entities should account for any allowances that it receives from government for less than fair value.²¹ With regard to liabilities, the project will examine the process by which allowances and credits

should be accounted for, as well as the reporting of changes in assets and liabilities in the profit or loss.²²

3.6 Summary

This section provided an overview of the systems, or the practices, associated with ETS, specifically the Directive, IFRIC 3 and the IASB Agenda project. These systems have structures, which are the unintended consequence of human activity. It was Macintosh and Scapens (1990) who argued that MAS represent the modalities of structuration in the three dimensions of signification, legitimation and domination. Section 4 therefore identifies the virtual structures that comprise the Directive and IFRIC 3, and seeks to argue that the Directive and IFRIC 3 represent the modalities of structuration in the three dimensions of signification, legitimation and domination.

4. Interpreting emissions trading through structuration theory - the virtual structures of emissions trading

This section uses structuration theory as a sensitizing device to analyse separately the virtual structures of signification, legitimation and domination resulting from the Directive and, up until June 2005, IFRIC 3. The recognition of assets and liabilities, therefore IFRIC 3, is separate from the measuring, monitoring and reporting of greenhouse gas emissions as part of the EU ETS, therefore the Directive. This section will seek to demonstrate how structures of signification are intertwined with structures of legitimation and domination. Giddens (1979) first explained that signification is structured in and through language which at the same time expresses aspects of domination, and that the codes that are involved in signification have a normative force. From a management accounting perspective, Norman Macintosh explained that by

signifying what counts, management accounting provides a discourse for the domination structure, while at the same time it provides legitimacy for the relevant social processes (Macintosh, 1994).

4.1 The establishment of the EU ETS – Directive 2003/87/EC

The establishment of the EU ETS was an unintended consequence of the failure of the European Commission to introduce an EU-wide carbon energy tax, due to opposition from EU nations and the main industry lobbies, as well as the unsuccessful attempt by the EC to fight against the inclusion of ETS as a flexible instrument in the Kyoto protocol in 1997, which convinced the EC that a successful ETS would have to be a domestic scheme (Convery, 2009). Legal advice received by the EC was that an EU ETS was central to the EC being able to make its case for achieving the Kyoto protocol commitments, that is, it could be “innovative, courageous and effective” in ensuring that “its performance matched its rhetoric” (Convery, 2009, p.396).

Agency, in the form of an EC team acting at practical and discursive consciousness and motivated by a sense of ontological security, was central to the development and establishment of the EU ETS. This team was headed by Jos Delbeke, who was awarded the Outstanding Achievement Award by the European Association of Environmental and Resource Economists in 2005 for his work in leading the EU ETS to realisation (Convery, 2009). His need for ontological security was therefore integral in the development of the EU ETS. Other key members of the team included Jürgen Lefevre, Damien Meadows and Arthur Runge-Metzger (Convery, 2009).

4.1.1 Directive 2003/87/EC and signification

The EU requires that information from the monitoring and reporting of greenhouse gas emissions, interpretative schemes that enable the reproduction of the signification structure, to possess the characteristics of completeness, consistency, transparency, accuracy, cost effectiveness, materiality and faithfulness (EU, 2004). The interpretative schemes are specified in the greenhouse gas emissions permits (EU, 2004). The Directive requires that emissions be measured using standardised or accepted methods, and that they be corroborated by a supporting calculation of emissions (EU, 2003). Bebbington and Larrinaga-González (2008) believe that there are potential problems in the standardisation of carbon accounting and reporting without a sound understanding of the causes and consequences of global climate change. There are two interpretive schemes for the measurement of emissions: (1) a calculation-based methodology which determines emissions from source streams based on activity data; and (2) a measurement-based methodology, which determines emissions by means of continuous measurement of the concentration of the relevant greenhouse gas (EU, 2007). Apart from the measurement of emissions, the EU ETS required the establishment of an interpretive scheme, the Community Independent Transaction Log, which records the issuance, transfer, cancellation, retirement and banking of allowances that take place in the national registry, the purpose of which is to ensure the accurate accounting of all units under the Kyoto Protocol and allowances under the Community scheme for greenhouse gas emission allowance trading²³.

A revised version of the Directive, released on 17/12/2008, defined the interpretive schemes for the free allocation of CO₂ allowances that were to be based upon benchmarks that are set to be adopted by 31/12/ 2010²⁴. In summary, Bebbington and Larrinaga-González (2008) believe that stakeholders need non-financial information about emissions in order to assess carbon intensity, estimate regulatory and competitive risk and assess how the organisation manages emissions and risks.

4.1.2 Directive 2003/87/EC and legitimation

The Directive established the EU ETS for the purpose of promoting reductions of greenhouse gas emissions in a cost-effective and economically efficient manner (EU, 2003). This represents the ‘moral obligation’ of the EU ETS, acceptance of which legitimates the reduction of greenhouse gas emissions. The guidelines for the monitoring and reporting of emissions, or the “conceptual framework”, and therefore the basis of the legitimation structure, was based upon: (1) monitoring of CO₂ emissions; (2) calculation; (3) measurement; (4) monitoring of emissions of other greenhouse gases; and (5) reporting of emissions.²⁵ The signification structure resulting from the monitoring and reporting of greenhouse gas emissions would be drawn upon by the European Parliament and the Council for the European Union, using the discourse of ‘greenhouse gas emissions’, in order to legitimate their policy of a reduction in greenhouse gas emissions. The interaction of structures of signification and domination would be evident as interpretive schemes would be used to legitimate the pursuit of the objectives of the European Parliament and the Council for the European Union, describe and debate the purpose of the EU ETS as well enable agents to understand the aims and objectives of the EU ETS (see Conrad, 2005).

The responsible institutional body for the EU ETS is the European Parliament and the Council for the European Union, which established the EU ETS in 2005 because climate change was as a priority for action (EU, 2003). The EU ETS recognized a commitment to achieving an 8 % reduction in greenhouse gas emissions by 2008 to 2012 compared to 1990 levels, and that, in the longer term, emissions would need to be reduced by 70% compared to 1990 Levels (EU, 2003). The sanctions within the EU ETS are the verification and penalties provisions, contained in articles 15 and 16 respectively. Article 15 requires that emissions be subject to verification on the basis of reliable and credible data that enables the emissions to be determined with a high degree of certainty (EU, 2003). Article 15 also requires that the verifier be independent of the operator. A debate on verification and accreditation that was held at the “EU ETS Compliance: the Way Forward” conference in September 2008 in Brussels, Belgium highlighted that accreditation provides confidence in verification services and emissions figures, which in turn should ensure the adequacy and equivalence of ETS verifications (EU, 2008).

Article 16 requires member states to formalize the penalties that are applicable to infringements of the Directive (EU, 2003). If an organization is unable to buy allowances to cover excess emissions, the Directive sets a penalty of 100/EUA for each unit uncovered by purchased allowances and entities still have to buy carbon emission rights to offset those uncovered emissions²⁶ (Bebbington & Larrinaga-González, 2008).

4.1.3 Directive 2003/87/EC and domination

Articles 9, 10 and 11 of the Directive explain its role as an allocative resource, enabling agents within the European Council and European Parliament to reproduce the associated domination structure, the allocation and issue of allowances. Article 10 requires member states to allocate at least 90 % of the allowances free of charge whilst Article 11 required member states to decide upon the total quantity of allowances that it will allocate for the five year period beginning 1 January 2008 (EU, 2003).

Article 21 of the Directive explains its role as an authoritative resource, as it requires member states to submit to the EC a report its application (EU, 2003). The report is required to examine the application of the Directive with respect to the allocation of allowances, the operation of registries, the application of the monitoring and reporting guidelines and verification and compliance issues (EU, 2003). It is therefore a modality by which the EC can exert control over the member states to ensure that they comply with the directive and therefore the EU ETS. The dialectic of control was also evident because, as observed by Braun (2009), staff members from DG Environment were able to play a dominant role as policy entrepreneurs for the development of the EU ETS because of their possession of, as well as control over, the knowledge being shared, whilst experts from consultancies, environmental NGOs and business associations, were able to influence the policy-making process of the EU ETS.

In summary, the Directive provided a new structure of signification, which legitimated the right of the EC to hold member states to account with regard to the allocation of allowances, the monitoring and reporting guidelines, verification and compliance with the

Directive. The interpretive schemes within the Directive have therefore enabled new structures of legitimation and domination to be established. Specifically, there is an inter-relationship between the language used to describe the purpose of the Directive and agents' understanding of it. The language of the Directive also legitimates the right of the EC to hold member states to account with regard to its application. As explained by Giddens (1979), all social practices, in this instance the Directive and therefore the EU ETS, involve the elements of signification, legitimation and domination, with the result, as observed by Macintosh (1994), that signification is implicated in both the legitimation and domination structures of the Directive and therefore, the EU ETS.

4.2 IFRIC 3

The establishment of the EU ETS by the EC team raised questions about the appropriate accounting for the scheme in accordance with IFRS (IASB, 2010). Therefore, an unintended consequence of the establishment of the EU ETS by the EC team was how to account for the associated assets and liabilities. In February 2002, agency, specifically the members of the IFRIC²⁷, acting at the practical and discursive levels of consciousness and motivated by a sense of ontological security, decided that the IFRIC should develop an interpretation in order to explain how entities should apply IFRSs to cap and trade schemes (IASB, 2004, 2010). The IFRIC issued a draft interpretation D1 Emissions Rights in May 2003. The period between the issue of D1 and the introduction of IFRIC 3 in September 2004 was characterized by conflict between the IFRIC and the respondents to D1, as few respondents agreed to D1, particularly in the case where an entity holds its allowances in order to settle forecast emissions obligations (IASB, 2010). However, because of pressure from constituents about the absence of a signification structure, the

lack of guidance on accounting for the EU ETS, the IFRIC decided to issue IFRIC 3 in September 2004 (IASB, 2010). The absence of a signification structure meant that there was no accounting discourse for the associated domination structure, whilst accounting was unable to provide legitimacy for the social processes associated with the EU ETS.

4.2.1 IFRIC 3 and signification – a structural contradiction

The development of IFRIC 3, issued in December 2004, was based upon the IASB Framework for the Preparation and Presentation of Financial Statements, which identified that financial information should possess the characteristics of understandability, relevance, reliability and comparability (AASB, 2004). Reliability is characterised by faithful representation, substance over form, neutrality, prudence and completeness (AASB, 2004).

Prior to its withdrawal in June 2005, IFRIC 3 identified three elements of a signification structure, an asset for allowances held, a government grant and a liability, an obligation to deliver allowances equal to emissions that have been made (UIG, 2005). Rights (allowances) were intangible assets that were to be recognised in accordance with IAS 38 Intangible Assets, whilst the liability, obligation to deliver allowances, was to be recognized in accordance with IAS 37 Provisions, Contingent Liabilities and Contingent Assets (FEE, 2005). If allowances were issued for less than their fair value, the difference between the amount paid and their fair value was a government grant that was to be accounted for in accordance with IAS 20 Accounting for Government Grants and Disclosure of Government Assistance (FEE, 2005).

The interpretative schemes for allowances, contained in IAS 38, were that they were to be initially measured at cost, and then subsequent to acquisition, either the cost model or the revaluation model was to be the basis for measurement²⁸. The interpretative scheme for the liability, obligation to deliver allowances, was contained in IAS 37, which required provisions to be measured at the “best estimate of the expenditure required to settle the present obligation at the balance sheet date”²⁹.

In May 2005, the Chairman of the European Financial Reporting Advisory Group (EFRAG), Stig Enveldson, motivated by a sense of ontological security, recommended to the EC that it should not endorse IFRIC 3 because there was a mismatch between the measurement of allowances and the corresponding liability (EFRAG, 2005). Specifically, he argued that IFRIC 3 did not meet the criteria of understandability, relevance, reliability and comparability and therefore did not meet European parliamentary and council requirements on the application of international accounting standards (EFRAG, 2005). The EC subsequently requested the IASB to defer the effective date of IFRIC 3 because the markets for EU allowances were thin, and some European governments had yet to issue emission rights, with the result that there was not an urgent need for IFRIC 3 as originally concluded in 2004 (IASB, 2005, 2008). Subsequent to this development, the IASB withdrew IFRIC 3 in June 2005 (IASB, 2005, 2008). The primary reason for the withdrawal of IFRIC 3 was an EC request to the IASB, which was based upon the opinion of EFRAG. Agency therefore played a significant role in the withdrawal of IFRIC 3, specifically the Chairman of EFRAG, Stig Envoldsen.

IFRIC 3 was not a source of ontological security to the Chairman and board members of EFRAG, and subsequently the IASB, due to unsatisfactory measurement and reporting mismatches, as acknowledged by both the IFRIC and the IASB (IASB, 2005). This was because IAS 37 required liabilities to be measured at fair value with changes in fair value recognised in the profit and loss whereas IAS 38 required assets to be measured at cost or revalued amount with changes in fair value being included as an equity item and not in the profit and loss (AASB, 2005). This represented a structural contradiction because the modalities of IAS 37 and 38 had rules that worked against each other (Boland, 1993). Both EFRAG and the Fédération des Experts Comptables Européens (FEE) believed that IFRIC 3 was constrained by the IFRIC's interpretation of the interplay between the existing standards, IAS 37, 38 and 20 (EFRAG, 2005; FEE, 2005). The IASB's interpretation of fair value³⁰ has been criticized because IFRS apply fair value more widely to non-financial assets than do FASB standards, which may adversely and significantly change present practice (Whittington, 2008).

In summary, the withdrawal of IFRIC 3 by the IASB is an example of the board members of the IASB, acting at the discursive level of consciousness, and therefore changing the accounting rules with regard to ETS in what represents a critical situation. IFRIC 3 was no longer a source of ontological security to the board members of the IASB because of the measurement and reporting mismatches, as highlighted in the EC request that was based upon an opinion by the EFRAG chairman, Stig Envoldsen.

4.2.2 *IFRIC 3 and legitimation*

The legitimacy of the IFRIC to develop IFRIC 3 was based upon its mandate which is to review, on a timely basis, widespread accounting issues within the context of International Financial Reporting Standards (IFRSs), in order to reach a consensus on appropriate accounting treatment as well as provide authoritative guidance³¹. Its intellectual legitimacy (see Tollington, 2006) is based upon the IASB framework for the preparation and presentation of financial statements (AASB, 2004). The chairman of EFRAG, Stig Envevoldsen, argued that IFRIC 3 did not meet the criteria of understandability, relevance, reliability and comparability that financial information must satisfy for the purposes of making economic decisions and assessing the stewardship of management (EFRAG, 2005). He also argued that IFRIC 3 did not meet the requirements of Regulation (EC) No 1606/2002 of the European Parliament and Council on the application of international accounting standards because it was contrary to the ‘true and fair’ principle as set out in Articles 2(3) of Council Directives 83/349/EEC and 78/660/EEC (EFRAG, 2005). Based upon these arguments, EFRAG argued that it was not in the European interest to adopt IFRIC 3 and that the EU Commission should therefore not endorse IFRIC 3 (EFRAG, 2005).

As a structure of legitimation, IFRIC 3 was therefore in conflict with the organizational norms as specified in the IASB conceptual framework and the regulations of the European Parliament and Council. IFRIC 3 failed the test of relevance in the IASB conceptual framework because the mismatch of the measurement of emission rights at historical cost and the measurement of the liability at the present market price created an

inappropriate accounting result, whilst it also failed the test of reliability because the accounting mismatches meant that IFRIC 3 would not faithfully represent economic reality where an entity did not trade emission rights (EFRAG, 2005; FEE, 2005). IFRIC 3 was also in conflict with the organizational norms of the European Parliament and Council on the application of international accounting standards, specifically Regulation (EC) No 1606/2002 (EFRAG, 2005).

Tollington (2006) observed that the legitimacy afforded by legal and social structures is developed and underpinned by a process of consultation. The IFRIC initially issued IFRIC 3 due to pressure from constituents about the lack of guidance on accounting for the EU ETS (IASB, 2008). Whilst this was opposed by some respondents on the basis that it should wait until the design of the EU ETS becomes clearer as well as being able to interpret a revised version of IAS 20, the IFRIC proceeded to issue IFRIC 3 due to a need for timely guidance in order to prevent divergent practices (UIG, 2005). However, FEE (2005) argued that if IAS 20 was amended to require the recognition of government grants as income, deferred income would be eliminated, resulting in a greater accounting mismatch. The IFRIC was uncomfortable with this and announced that it would encourage the IASB to amend IAS 38 ‘as soon as possible’ in order to permit allowances traded in an active market to be measured at fair value³² (FEE, 2005). However, Whittington (2008) believes that the IASB’s perceived preference for fair value as a measurement objective within the IASB / FASB joint conceptual framework is likely to be strongly contested.

4.2.3 *IFRIC 3 and domination*

As an authoritative resource, IFRIC 3 had the same authority as a standard issued by the IASB,³³ whilst the authority of the IFRIC originated from its mandate, which included reaching consensus on appropriate accounting treatment³⁴. Prior to the release of IFRIC 3, there had been no consensus on how ETS should be accounted for (IASB, 2004). As an allocative resource, IFRIC 3 required organizations to recognize rights (allowances) as intangible assets in financial statements in accordance with IAS 38 as well as require organizations to recognise a provision for their obligation to deliver allowances when they produce emissions, in accordance with IAS 37 (FEE, 2005).

The European Commission and EFRAG were able to weaken IFRIC 3 as an authoritative resource by drawing upon resources at their disposal, specifically Regulation (EC) No 1606/2002 of the European Parliament and of the Council on the application of international accounting standards. The dialectic of control was evident as both EFRAG, specifically its chairman, Stig Enveldson, and the European Commission, were able to resist the authority of the IFRIC and IASB and thereby exert power by using the regulation to argue that IFRIC 3 was contrary to true and fair principles as contained in the Council's directives and that it did not meet the criteria of understandability, relevance, reliability and comparability. As a result of this action, the IASB withdrew IFRIC 3 in June 2005 (IASB, 2010). This, combined with the fact that the modalities of IAS 37 and 38 had rules that worked against each other, also reduced the effectiveness of IFRIC 3 as an allocative resource. At present, the IASB is attempting to define when a

constructive obligation should be recognized as a liability in its revision of IAS 37 (Whittington, 2008).

4.2.4 A crisis of signification, legitimation, domination and unintended consequences - the withdrawal of IFRIC 3

The measurement and reporting mismatches that led to the withdrawal of IFRIC 3 represented a crisis of signification, first illustrated by Norman Macintosh in the cases of GM and the DoD (Macintosh, 1994; Macintosh & Scapens, 2001), and subsequently in the New Zealand health system (Lawrence et al., 1997) and British Gas (Conrad, 2005). Leading up to the withdrawal of IFRIC 3, there was a clash between measuring liabilities at fair value and recognizing the associated changes in the profit and loss statement, whilst at the same time measuring assets at cost or revalued amount with the recognized changes in fair value being included as an equity item. In summary, the tensions between the measurement requirements of assets and liabilities under IAS 38 and IAS 37 represented a crisis of signification which had an unintended consequence, the withdrawal of IFRIC 3.

The interaction of structures of signification, legitimation and domination was evident as IFRIC 3 failed the test of relevance and did not faithfully represent economic reality, as required by the characteristic of reliability within the IASB framework. Therefore, IFRIC 3, as a legitimation structure, resulted in tension between the moral stance of compliance with the laws and rules of accounting, IFRIC 3, and compliance with the IASB framework. This enabled EFRAG and the EC to weaken IFRIC 3 as an authoritative resource by using the resources at their disposal, specifically Regulation (EC) No 1606/2002, to argue that IFRIC 3 was contrary to the true and fair principles as contained

in the Council's directives and that it did not meet the criteria of understandability, relevance, reliability and comparability.

Due to the withdrawal of IFRIC 3, EU companies are accounting for the issues associated the EU ETS in accordance with the accounting frameworks governed by either the EU's Accounting Regulatory Committee, the IAS adopted by the EU Commission or by Member States' domestic legislation (Braun, 2009). Given that EFRAG and the EU Commission were able to erode the legitimacy of IFRIC 3 as an authoritative resource through the application of European parliamentary regulations on the application of international accounting standards, the use of these accounting frameworks by EU companies may enable EFRAG and the EU Commission to exert authority over the IASB and the FASB and therefore influence their decisions with respect to the development of an accounting standard with regard to the ETS in the future. Further, MacKenzie (2009) argues that the accounting invisibility of carbon following the withdrawal of IFRIC 3 may provide incentives for companies to sell their allowances and therefore generate income, rather than use the allowances to cut emissions. This could enable companies to resist the authority of the European Parliament and the Council of the European Union by undermining an objective of the EU ETS, which is to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient manner (EU, 2003).

The advantage of a structuration theory approach to ETS is that it sensitizes researchers to the role of accounting in a critical situation. The absence of an accounting interpretation or standard with regard to ETS is evidence of a critical situation. The IASB

/ FASB Agenda project, the purpose of which is to develop a new exposure draft and subsequent accounting standard with regard to ETS, is evidence of the board members of the IASB / FASB acting at the discursive level of consciousness, recognizing the need for new accounting guidance and a subsequent standard with regard to ETS and therefore can provide “reasons for and rationalize about what they do in social settings” (Macintosh 1994, p.171). Macintosh and Scapens (1991) argued that in the case of GM, the managers’ unconscious motivation for ontological security favored the rapid acceptance of a new system of management control. In the case of the Agenda project, the IASB / FASB board members unconscious motivation for ontological security is present in the current process of developing a new accounting exposure draft and subsequent standard with regard to ETS.

4.3 The IASB and the FASB Agenda project – the emergence of a dominant coalition with regard to emissions trading

In September 2005, the IASB added a project to its agenda for the purpose of addressing the accounting for ETS in order to fill the void in accounting guidance left by the withdrawal of IFRIC 3, due in part to the belief that this had resulted in considerable diversity in accounting for ETS (IASB, 2007a). The IASB believed that if it did not take a lead on this issue, there would be a risk of diversity in accounting practice continuing and that when it withdrew IFRIC 3, it gave a clear signal to the marketplace that it would address the issue (IASB, 2007a). This is evidence of the board members of the IASB experiencing a heightened conscious need for ontological security, and therefore seeking to reshape the accounting signification structure with regard to ETS, as well as the domination and legitimation structures, in a similar fashion to Alfred Sloan at GM (Macintosh, 1994; Macintosh & Scapens, 1991).

The FASB became involved with the IASB in the Agenda project in 2008, the purpose of which is to develop comprehensive guidance on accounting for ETS (IASB, 2008), with the objectives of publishing a joint exposure draft in 2010 and issuing a joint standard in 2011 (FASB / IASB, 2009). The IASB believed that the involvement of the FASB might accelerate the IASB project (FASB, 2007). Given that EFRAG and the EC were able to weaken IFRIC 3 as an authoritative resource through the application of an EC regulation, the involvement of the FASB may reduce the likelihood of measurement mismatches associated with the proposed joint standard by ensuring that it meets the criteria of understandability, relevance, reliability and comparability. This may then strengthen the proposed standard as an authoritative resource.

The IASB / FASB Agenda project needs to be considered in the context of the IASB / FASB conceptual framework project³⁵, which started in 2005 (Whittington, 2008). The first step in the Agenda project was an IASB / FASB meeting³⁶ on 21/10/2008 which agreed upon the following: (1) credits and emission allowances meet the definition of an asset in both the IASB and FASB conceptual frameworks; (2) most credits and emission allowances will meet the criteria for recognition because an entity controls the emission allowances and therefore the future economic benefits; (3) in schemes with active markets, quoted market prices provide entities with a reliable measurement of the value of emission allowances; and (4) until an entity starts producing emissions, it has no present obligation, or liability, to surrender credits or emission allowances to the administrator under either scheme (FASB / IASB, 2008). Whilst the meeting agreed upon

a variety of issues with regard to the definition, recognition and measurement of credits and emission allowances, no decisions were made (IASB, 2008). Subsequent to this meeting, an IASB / FASB meeting in November 2009 discussed the accounting for cap and trade schemes that have voluntary participation and found support for the view that an entity receives two assets when it becomes a member of a voluntary scheme, membership in the scheme and the right to an allocation (IASB / FASB, 2009). The discussion of voluntary schemes was to be used as a starting point for discussing the accounting for items in a statutory scheme³⁷ (IASB / FASB, 2009).

Once the IASB and FASB develop a new accounting standard or interpretation with regard to ETS, it will provide the modalities that will enable the reproduction of new structures of domination, as well as signification and legitimation. This is because changing the signification structure will involve a realignment of duties and responsibilities, or domination, whilst the legitimation structure will provide the moral component of the domination structure.

5. Discussion and conclusion

This paper provided an overview of the contribution of Norman Macintosh to the development of structuration theory and its methodological approaches within the accounting discipline, and then used structuration theory as a sensitizing device to analyse the introduction of the EU ETS and the associated accounting interpretation, IFRIC 3.

Structuration theory, which refers to the conditions governing the continuity or transformation of structures and the reproduction of systems (Giddens, 1976, 1979, 1984) was developed by Anthony Giddens as a sensitizing device for the purposes of thinking about research problems and interpreting research results (Giddens, 1984). Norman Macintosh, along with John Roberts and Robert Scapens, was one of the first researchers to contribute to the development of structuration theory within the discipline of accounting.

Norman Macintosh, along with Robert Scapens, was the first researcher to demonstrate the potential of structuration theory as a sensitizing device within management accounting research, using the case of GM to demonstrate the interconnection of structures of signification, legitimation and domination, and how they are reproduced and changed in routine and critical situations respectively. In the process, he also demonstrated that MAS comprise structures of signification, legitimation and domination, using the University of Wisconsin budgeting system to illustrate that MAS are interpretative schemes that embody the norms of organizational activity as well as being an authoritative resource.

He further demonstrated the potential of structuration theory as a sensitizing device by using the dialectic of control to explain the ethics of profit manipulation, as well as demonstrating the role of agency in changing MAS, using the case of GM to illustrate how the GM executives implemented a new MAS in a critical situation. Norman Macintosh also used the examples of the University of Wisconsin and GM to illustrate

that MAS are a source of ontological security to agents because of their regular and predetermined reporting patterns.

Norman Macintosh contributed to the methodological considerations of structuration theory by arguing that institutional analysis is needed to complement the analysis of strategic conduct in order to explore how accounting statements are understood and accepted by managers as well as how accounting practices are at their most powerful when managers take accounting standards for granted. In summary, Norman Macintosh and Robert Scapens highlighted that the conceptual link between agency and structure is a central feature of both institutional analysis and the analysis of strategic conduct.

Hopwood (2009) recognized the need for critical research of ETS because of the likelihood of fraud, manipulation and unanticipated consequences. Structuration theory, as a sensitizing device, responds to this request because it highlights how the development and interaction of structures of signification, legitimation and domination of the EU ETS and IFRIC was shaped by the role of agents in critical situations that were characterized by conflict, contradiction and unintended consequences.

The EU ETS, established by the Directive of the European Parliament and council, was an unintended consequence of the failure of the European Union to introduce a carbon energy tax. Agency, in the form of an EC team, headed by Jos Delbeke, acting at practical and discursive consciousness and motivated by a sense of ontological security, was central to the establishment of the EU ETS.

The Directive enabled a structure of signification to be reproduced as it specified the interpretive schemes that were to be used for the measurement of emissions, as well as the issuing and banking of allowances. It also established the ‘moral obligation’ of the EU ETS, which, through the interpretive schemes, legitimated the pursuit of the objectives of the EU ETS, as well as containing provisions for verification and penalties. The responsible institutional bodies for the EU ETS were the European Parliament and the Council for the European Union. The Directive also represented an allocative resource as it contained requirements for the allocation and issue of allowances, whilst as an authoritative resource, it required member states to issue a report on its application. The dialectic of control was also evident as staff members from DG environment were able to exercise control over the knowledge being shared whilst experts from consultancies and NGOs were able to influence the policy-making process of the EU ETS. In summary, the language of Directive 2003/87/EC legitimated the right of the EC to hold member states to account with regard to the EU ETS.

The introduction of IFRIC 3 in September 2004 was an unintended consequence of the establishment of the EU ETS which raised questions about the appropriate accounting for the scheme in accordance with IFRS. Up until its withdrawal in June 2005, IFRIC 3 identified three elements of a signification structure that resulted from a cap and trade ETS, an asset for allowances held, a government grant and a liability, an obligation to deliver allowances equal to emissions that have been made. The interpretative schemes were contained in IAS 38 and IAS 37 respectively. Agency, specifically, the Chairman of EFRAG, motivated by a sense of ontological security, recommended to the EC that it should not endorse IFRIC 3 because of the unsatisfactory measurement and reporting

mismatches resulting from the application of IAS 37 and IAS 38. IFRIC 3 was subsequently withdrawn by the IASB upon request from the EC in June 2005. IFRIC 3 represented a structural contradiction because it did not meet European parliamentary requirements on the application of international accounting standards whilst the modalities as contained in IAS 37 and 38 had rules that worked against each other respectively. This crisis of signification had an unintended consequence, the withdrawal of IFRIC 3.

The legitimacy of the IFRIC to develop IFRIC 3 was based upon its mandate to review accounting issues on a timely basis in order to provide consensus on the appropriate accounting treatment. IFRIC 3 failed the tests of relevance and reliability according to the IASB framework as well as the regulations of the European Parliament and Council due to the measurement and reporting mismatches and the belief that it would not faithfully represent economic reality. Therefore, as a legitimation structure, IFRIC 3 resulted in tension between the moral stances of compliance with IFRIC 3, as well as compliance with the IASB framework and the organizational norms of the European Parliament and Council on the application of international accounting standards. This enabled EFRAG and the EC to draw upon the resources at their disposal and resist the authority of the IASB through the dialectic of control. Specifically, they used the EC directives to reduce the effectiveness of IFRIC 3 as an authoritative and allocative resource by arguing that IFRIC 3 was contrary to the true and fair principles as contained in the EC's directives and that in addition, it did not meet the criteria of understandability, relevance, reliability and comparability. As a result, the IASB withdrew IFRIC 3 in June 2005.

The withdrawal of IFRIC 3 has resulted in a structural contradiction as there is an absence of an accounting discourse with regard to emissions trading, evidence of a critical situation. Due to this structural contradiction, the IASB and FASB board members, acting at the discursive level of consciousness with an unconscious motivation for ontological security, have formed a coalition, the Agenda project, with the purpose of developing a new accounting signification structure with regard to ETS. This will provide the modalities that will enable the reproduction of new structures of signification, legitimation and domination. Future accounting research using the dialectic of control as a sensitizing device could examine in more detail the process by which the IASB and FASB are developing a new accounting exposure draft and subsequent standard with regard to ETS.

Appendix A Glossary of abbreviations

Abbreviation	Meaning
DoD	Department of Defence
EC	European Commission
EFF	Enrolment funding formula
EFRAG	European Financial Reporting Advisory Group
ETS	Emissions Trading Schemes
EU ETS	European Union Emission Trading Scheme
EU	European Union
EUA	European Union Allowances
FASB	Financial Accounting Standards Board
FEE	Fédération des Experts Comptables Européens
GM	General Motors

IFRS	International Financial Reporting Standards
IFRIC	International Financial Reporting Interpretations Committee
MAS	Management Accounting Systems
NGOs	Non Government Organizations
UCA	Uniform Cost Accounting
UK	United Kingdom

Notes

¹ Macintosh and Scapens (1991) used two longitudinal field studies, Sloan (1963) and Ansari and Euske (1987), to illustrate the nature of structuration theory analysis.

² This is part of the discharging and control of accountability relationships (Granlund, 2003).

³ Englund and Gerdin (2008,p.1124) argue that by referring to MAS as modalities”, management accounting refers to “*properties of social structure*” or “represents something that generates action”.

⁴ Structuralist accounting researchers aim to isolate the structures which operate below the surface of the organizational life world (Scapens and Macintosh, 1996).

⁵ It is argued that a separation of the radical structuralist from the radical humanist “is not well supported within sociology itself, being based on a contentious reading of Marx’s arguments” (see Chua, 1986, p.627).

⁶ Roberts and Scapens (1985) initially drew a distinction between accounting systems and system of accountability, which Burns and Scapens (2000) modified in a framework that studies management accounting as the rules and routines (Scapens, 2006). Englund and Gerdin (2008) argue that if rules and routines denote situated and recurrent social action and are allowed to represent modalities, action and structure risk becoming conflated.

⁷ Boland (1993) would argue that the process of structuration can be expected to be in constant tension from multiple and contradictory structural properties, such as the need for stability versus the need for change.

⁸ The budget process within the University of Wisconsin was a structural contradiction because it enabled the University to “detach its internal social life from the structures which shaped relations between the University and the State” (Macintosh & Scapens, 1990, p. 465).

⁹ Boland (1993, p.127) would argue that “viewed up close, MAS are but one of a set of rules and resources available to actors”.

¹⁰ Buhr (2002) subsequently argued that “accountants value their ontological security” and are therefore more “likely to re-produce financial reporting structures than create new environmental reporting structures”.

¹¹ Busco et al., (2006, p. 32/3) subsequently argue that whilst accounting practices can be interpreted as sources of trust, forms of personal and system trust are implicated in the introduction and constitution of MAS as socially constructed objects of trust, that is, trust for accounting.

¹² Macintosh and Scapens (1990) was a counterpoint interpretation of Covalleski and Dirsmith (1988). Keating (1995, p.72) classifies counterpoint cases as theory refutation research, the purpose of which is “to disconfirm well-specified theories by bringing negative evidence to bear or to offer counterpoint readings of previous case-based interpretations”.

¹³ The accounting regime is a system of governance that operates at: (1) a macro level of national and international society, polity and economy; and (2) the micro level of organization; and permeates the personal level where accounting constitutes both rules and resources for action (Jones and Dugdale, 2001, p.58). For a detailed description, see Jones and Dugdale (2001).

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- ¹⁴ Englund and Gerdin (2008) subsequently argue that researchers need to collect data on situated recurrent action in order to make sense of and categorize management accounting practices as well as identify and understand the non-situated principles which enable and constrain the situated practices.
- ¹⁵ The Kyoto protocol was the 1997 international agreement under which most developed countries agreed to legally binding targets that would reduce emissions of the six main greenhouse gases by at least 5% below their 1990 levels over the period 2008-2012 (IASB, 2008).
- ¹⁶ When permits are supplied on demand an emissions fee / price cap / penalty price is charged (CPA, 2008).
- ¹⁷ Bebbington and Larrinaga-González (2008) believe that significant regulatory risks will arise from the possibility that governments decide to auction allowances if and when the objective to reduce carbon emissions by more than 80% (on a 1990 baseline) is translated into policy.
- ¹⁸ Directive 2003/87/EC is henceforth referred to as the Directive.
- ¹⁹ The European Union is an “economic and political partnership between 27 democratic European countries”. EU countries set up bodies to run the EU and adopt its legislation, including the European Parliament, the Council of the European Union and the European Commission (EC), which represents the common EU interest http://europa.eu/abc/panorama/index_en.htm <accessed 23/2/2009>.
- ²⁰ The IASB International Financial Reporting Interpretations Committee (IFRIC) develops authoritative interpretations of existing IFRS (FEE, 2005).
- ²¹ <http://www.iasplus.com/agenda/emissiontrading.htm> <accessed 17/2/2009>
- ²² Ibid.
- ²³ http://ec.europa.eu/environment/climat/emission/citl_en.htm <accessed 8/3/2009>.
- ²⁴ The EC is set to adopt the benchmarks by 31/12/2010, the starting point for which will be the average performance of the 10% most efficient installations in a sector or sub-sector in the Community in the years 2007-2008 http://ec.europa.eu/environment/climat/emission/benchmarking_en.htm <accessed 8/3/2009>.
- ²⁵ For further detail see page L 275/44 of Directive 2003/87/EC.
- ²⁶ Bebbington and Larrinaga-González (2008) believe that this: (1) provides a substantive incentive to cover emissions; and (2) results in substantive costs for those who are unable to keep within their allowance inventory if allowances become less generous, and the market in carbon allowances more active.
- ²⁷ The IFRIC comprises 12 voting members drawn from a variety of countries and professional backgrounds, whose principal role is to consider within the context of International Financial Reporting Standards and the IASB *Framework*, accounting issues that are likely to receive divergent or unacceptable treatment in the absence of authoritative guidance, with a view to reaching consensus on the appropriate accounting treatment (IASB, 2004)
- ²⁸ <http://www.iasplus.com/standard/ias38.htm> <accessed 21/2/09>
- ²⁹ <http://www.iasplus.com/standard/ias37.htm> <accessed 21/2/09>
- ³⁰ Whittington (2008) observed that the IASB has attempted to prescribe the interpretation of fair value within FASB standards as being a current market sale price, ignoring transaction costs and free of entity specific assumptions.
- ³¹ <http://www.iasb.org/About+Us/About+the+IFRIC/About+the+IFRIC.htm> <accessed 23/2/2009>
- ³² Whittington (2008) believes that critics of fair value are offering an alternative view of financial reporting which is not well articulated and that the fair value view is not well articulated as its assumptions themselves should be under discussion.
- ³³ <http://www.iasb.org/About+Us/About+the+IFRIC/About+the+IFRIC.htm> <accessed 26/2/2009>
- ³⁴ Ibid.
- ³⁵ The IASB / FASB conceptual framework project seeks to converge and improve the frameworks of the two boards in order to provide a consistent intellectual foundation for the convergence of the two sets of standards (Whittington, 2008).
- ³⁶ See FASB / IASB (2008) for a detailed description of the main accounting issues at the inception of emissions related cap and trade and emissions related baseline and credit schemes.
- ³⁷ A statutory scheme is imposed by the government with the result that participation is mandatory and the scheme administrator determines the scope of the scheme and the amount of free allowances to be issued (IASB / FASB, 2009).

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