

PERSONAL VERSION

This is a so-called personal version (author's manuscript as accepted for publishing after the review process but prior to final layout and copyediting) of the article: den Hond, F, Boersma, FK, Heres, L, Kroes, EHJ & van Oirschot, E 2012, 'Giddens à la Carte?: Appraising empirical applications of Structuration Theory in management and organization studies' *Journal of Political Power*, vol 5, nr 2, s. 239-264., 10.1080/2158379X.2012.698901
<http://www.tandfonline.com/doi/abs/10.1080/2158379X.2012.698901>

This version is stored in the Institutional Repository of the Hanken School of Economics, DHANKEN. Readers are asked to use the official publication in references.

**Giddens à la Carte? Appraising empirical
applications of Structuration Theory in management
and organization studies**

**Frank den Hond, F. Kees Boersmaa, Leonie Heresa,
Eelke H.J. Kroesb and Emmie van Oirschotc**

Email: frank.denhond@hanken.fi

**Faculty of Social Sciences, VU University Amsterdam, The Netherlands;
@samhoud, Utrecht, The Netherlands
Amsterdam, The Netherlands**

ABSTRACT

There is an increasing interest in the application of Structuration Theory in the fields of management and organization studies. Based upon a thorough literature review, we have come up with a data-set to assess how Structuration Theory has been used in empirical research. We use three key concepts of this theory (duality of structure, knowledgeability, and time-space) as sensitizing concepts for our analysis. We conclude that the greatest potential of Structuration Theory for management and organization studies is to view it as a process theory that offers a distinct building block for explaining intra and interorganizational change, as exemplified through concepts such as routine, script, genre, practice, and discourse.

Keywords: structuration; Giddens; review; duality of structure; knowledgeability; time-space

CONTENTS

1	INTRODUCTION.....	1
2	PREVIOUS REVIEWS ON STRUCTURATION THEORY	4
2.1	Structuration theory.....	5
2.2	Duality of structure	5
2.3	Actor's knowledgeability	7
2.4	Structuration Theory.....	7
2.5	Time-space relations	9
3	DATA COLLECTION	11
3.1	Data analysis	12
3.2	Giddens 'in passing', 'à la carte', and 'full monty'	13
3.3	Empirical applications of structuration theory: an analysis	15
3.4	Evaluating the analysis of duality	15
3.5	Evaluating the analysis of time-space	20
4	DISCUSSION AND CONCLUSION	23
	REFERENCES	30

APPENDICES

Appendix 1	Literature search procedure.....	39
------------	----------------------------------	----

FIGURES

Figure 1	Relative attention to Giddens in selected journals (% of articles citing Giddens (1979) or (1984), n = 407).....	11
----------	--	----

1 INTRODUCTION

Structuration Theory (Giddens 1979, 1984, 1991a) has been used in the field of management and organization studies because the notion of structuration speaks of a recurrent issue in this field: the possibility, scope, or limitations of human agency in organized, i.e. institutionalized settings, or the problem of structure and agency, and through this to a series of research questions, including the relation between stability and change, and understanding process. For Giddens, these notions are related to the power dimension of institutions. Power must be seen as a productive force, as a means to change something: there is never a situation in which there is absence of choice. With this assumption, Giddens tries to transcend the idea that power is one-dimensional; a situation in which one actor has power over the other. Instead, he argues that power is an element of social relationships. In line with Lukes' (1974) multi-dimensional view of power, Giddens argues that actors have a relative autonomy in making choices, notwithstanding the fact that they do so under conditions not of their own choosing (compare Clegg et al. 2006, p. 213). The emphasis in Structuration Theory then is on the transformative capacity of human agency that makes change possible. Many scholars in the field of organization studies found these elements in Structuration Theory useful.

For example, Whittington argues that Structuration Theory has clear relevance to addressing problems of management control and managerial agency, notably whether and how structures can be used and modified by organizations and their members (Whittington 1992, pp. 697–698). Barley and Tolbert (1997) conclude that processes of institutionalization, i.e. how institutions are formed, reproduced, and modified, might be greatly informed by Structuration Theory. Poole and Van de Ven (1989), in discussing how to deal with paradox, maintain that Structuration Theory offers a new conception of the structure–agency paradox, and thereby enables the development of new insights and theory building because it allows researchers to consider action and structure simultaneously. Finally Brocklehurst (2001) used Structuration Theory as a framework to study power relations and identity in situations in which organizational members work at home. Based upon Giddens' conceptualization of power, Brocklehurst argues that working at home changes organizational relationships including issues of control because of the transformative capacity (i.e. power) of the employees to change the material and social world (Brocklehurst 2001, p. 447).

However, there is a tension between these positive appraisals of Giddens' Structuration Theory and some of the critiques that his theory has received. Critiques of Structuration Theory are of three sorts. First there is conceptual critique on the fundamental logic behind the theory, focusing on the notion of the 'duality of structure' (about the relation between actors and structures). This critique is most forcefully formulated by Archer (1982, 1988, 1995, see also: Hogsdon 2007 and Willmott 2000). Callinicos' (1985) critique of Giddens' notion of power as being incoherent is along these lines, too. We consider it beyond the scope of this paper to enter into this debate.

Second, there is conceptual critique on the level of specification and comprehensiveness of the theory (see Thrift 1985, as well as chapters in Held and Thompson (1989) and Bryant and Jary (1991); e.g. Urry (1991) on Giddens' ideas with regard to time-space). Indeed, although Structuration Theory is eclectic and suffers from poor definitional quality, it 'offers too much insight into the basic properties and dynamics of human action, interaction, and organization' (Turner 1986, p. 977) to discard it on these grounds. A third point of critique concerns the relationship between Structuration Theory and empirical research. It is this latter critique that we wish to engage with.

It is established wisdom that Giddens does not provide clear guidelines on the relationship between Structuration Theory and empirical research. The lack of clear operational definitions of structure and agency, its highly abstracted level of theorizing, and the very nature of the duality of structure and agency, have made the application of Structuration Theory in empirical organizational research difficult (e.g. Sewell 1992, Fuchs 2001, Whittington 2010).¹ Although Giddens discusses at some length a few examples of earlier research to illustrate how Structuration Theory may inform empirical research (Giddens 1984), these do by no means constitute a discussion of how Structuration Theory may productively inform empirical research. In fact, Giddens explicitly states that providing an exhaustive account of the best applicable methodological procedures is not his objective (Giddens 1984, p. 327), a position that he reiterates at later points in time (Giddens 1989a, p. 294-ff., 1991, p. 201). Concerning the three 'guidelines' he does provide in *The Constitution of Society* (Giddens 1984, p. 284-ff.), Gregson (1989, p. 243) concludes:

first, that the ontological concerns reflected in the guidelines offered for empirical research renders them virtually useless for such research and, second, that the concepts contained within structuration theory itself have little distinctive or new to offer to

either the conceptualization of empirical research projects or their existing content. Yet its 'connection to empirical research is fundamentally important' (Gregson, 1989, p. 236). Given this challenge to researchers who consider or wish to use Structuration Theory in empirical research, and the apparent appeal that this theory has had, we seek to appraise to what extent and how it has been used, as well as to discuss how it may be used well, in the field of management and organization studies.

2 PREVIOUS REVIEWS ON STRUCTURATION THEORY

Of course there are a few studies, both theoretical treatises and literature reviews, that seek to appraise Structuration Theory. Our approach differs both in topic and focus from earlier, related reviews. Gregson (1989) is one of the first evaluations of the relevance of Structuration Theory to empirical research; she concludes that essentially Structuration Theory is irrelevant because of the theory's 'patent inability' to 'help illuminate empirical research' (p. 237). However, if Gregson is right, are those scholars who seek to ground their empirical work in Structuration Theory wrong? Or are they basically uninterested in taking Structuration Theory seriously as an ontology for their empirical work? After all, there is an increase in the attention to Structuration Theory in the field of management and organization studies (Figure 1). In 1992, Whittington wrote a conceptual review as there were relative few articles engaging with Structuration Theory in the field of organization studies.

But more than a decade later, Pozzebon (2004), Pozzebon and Pinsonneault (2005) and Jones and Karsten (2008) were able to review considerable bodies of empirical work. Poole and DeSanctis (2004) published a comprehensive assessment on structuration theory in information systems research.

However, the latter reviews are focused on particular areas – information technology (Pozzebon and Pinsonneault 2005) and information systems research (Poole 30 and DeSanctis 2004, Jones and Karsten 2008) – that are adjacent to the field of management and organization studies, which is the focus of our study. Hence we selected a different sample of journals and used different search terms (but nevertheless, a small number of information systems research papers was captured by our selection criteria). Other reviews discuss the impact Structuration Theory has had on various discourses of strategy research (Pozzebon 2004), its relevance to 'strategy-as-practice' (Whittington 2010), power relations (Courpasson 2000, Brocklehurst 2001), and the use of process research methodologies in strategy research (Sminia 2009). Structuration Theory is a major, but not the sole, source of inspiration for process research, hence there is a small overlap in the articles covered.

In what follows, we first will give an overview of the theory itself, and next, we will evaluate how well Structuration Theory has been applied in a number of exemplary empirical studies. Upfront we want to make clear that it is not our stance that 'more'

usage of Giddens is necessarily 'better'. Precisely because Structuration Theory is not easily applied empirically, we treat this as a question that warrants debate.

2.1 Structuration theory

Giddens' approach to the relationship between structure and agency – seen as a central problem to social theory in the 1980s and 1990s (Ritzer 2000, Hodgson 2007) – is among the better known.² As with all sociologists occupied with the structure–agency problem, Giddens sought to resolve it by linking the purely structuralist theories to the agency-focused, interpretative theories. Since then, many scholars – in many different social science fields – have referred to Giddens when

writing about processes of change and innovation in various contexts (Poole and DeSanctis 2004).

We base our analysis mainly on two books by Giddens that systematically set out his thinking on structuration (Giddens 1979, 1984). Rather than giving an extensive account of the theory and all of its complexities,³ and given the relative disconnect between the formulation of Structuration Theory and empirical research, we discuss three elements that are quintessential in the light of informing empirical work in the field of management and organization studies: the duality of structure, the actor's knowledgeability, and time/space relations. In our subsequent analysis below, we will use these three elements as sensitizing concepts (Blumer 1954), as they draw attention to the most important features of social interaction as defined by Giddens (cf. Macintosh and Scapens 1990).

2.2 Duality of structure

Obviously, the duality of structure is a central concept in Structuration Theory. It is the concept that has received the most forceful critique (the 'central conflation' argument, Archer 1982, 1988, 1995, Willmott 2000, see also Stones 2005), and must for that reason be considered the core of Structuration Theory. A convenient way of comprehending Structuration Theory is by regarding it as a synthesis of earlier debates on structure–agency relations; between functionalism and structuralism on the one side, and hermeneutics and the various forms of interpretative sociology on the other. As Giddens (1984) rightly mentions, the debate should not be seen as just a question of the causal relation between actors and structures, but rather as a discussion on the

ontology of social structures. Functionalism and structuralism do not just emphasize the pre-eminence of society's structures on its individual parts and thereby their constraining properties, but also assume these structures to hold objective qualities. In hermeneutics and interpretative sociology, conversely, structures are considered to exist as subjective phenomena and consequently, the focus of analysis is on the experience of individual actors.

In order to overcome the stalemate between these conflicting perspectives, Giddens (1979, 1984) denounces the dualism implied in the opposition between actor and structure and speaks of a 'duality of structure'. The underlying premise is the notion that structures exist in and through the activities of human actors. Human actions are recursive over time, and it is this recursive quality of human activities that creates structure. Simultaneously, however, those same activities are shaped by the structure and in that sense are recreating the structure. Essential in his notion of structure is that it is not external to human action but, rather, 'structure is what gives form and shape to social life, but it is not itself the form and shape' (Giddens 1989b, p. 256). As a result of this duality, the domain of analysis in social sciences shifts from either the individual actor or any form of social totality toward 'social practices ordered across space and time' (Giddens 1984, p. 2). Thus, when employing Structuration Theory as an analytical tool to study social phenomena, the researcher may assume that structures exist in practice and therefore focus on the analysis of 'recurrent social practices' (Giddens 1989b, 1991a).

According to Giddens, structure consists of rules and resources. He distinguishes two types of rules: interpretative and normative. Interpretative rules are about the actors' interpretation of the world in which they live; they constitute the cognitive aspect of social structure. Normative rules are about the legitimization of actions.

Resources are distinguished into: authoritative resources (power relationships) and economic (or allocative) resources. With regard to the actors' action, Giddens criticizes the voluntaristic idea, which overestimates the actors' ability to act according to his/her own free will. Power therefore is always relational, processual and a property of interaction. In this respect, authoritative resources are crucial to understanding power relationships: power is never a possession, and authority is never all-embracing or total, but the outcome of actors' position in the social. Yet, this does not imply that actors are slaves of pre-existing structures; they have the power to 'act otherwise', the possibility to say 'no' (Giddens 1984, p. 12). It is important to notice that Giddens'

notion of power as an intrinsic part of human life must be understood in the light of his criticism of Parsons who neglects ‘power over’ in favor of ‘power to’ (Clegg et al. 2006, p. 197; compare Mouzelis 2000, Haugaard 2002, p. 4). For Giddens, the idea that an actor has the ability to act otherwise is crucial. In his own words: ‘In Foucault, as in Parsons, although for different reasons, power is not related to a satisfactory account of agency and knowledgeability as involved in the “making of history”’ (Giddens 1984, pp. 257–258). If (inter) action is characterized by three dimensions – communication, (exercise of) power, and (application of) sanction – and structure by three corresponding dimensions – signification, domination, and legitimation – (Giddens 1984), then structuration occurs, and can be observed, in the ‘modalities’ that connect between structure and action. And to the extent that people may command more resources, and play upon more rules, their capacity for action is greater: ‘[r]esources give power; plurality [of rules] affords discretion’ (Whittington 2010, p. 111).

2.3 Actor’s knowledgeability

To the extent that Giddens does provide ‘guidelines’ (1984, p. 284) to orient empirical research, he points out that ‘it has a necessarily cultural, ethnographic or “anthropological” aspect to it’ (1984, p. 284) and that it ‘be sensitive to the complex skills which actors have in co-ordinating the contexts of their day-to-day behaviour’ (1984, p. 285). The researcher must acquaint himself with the meaning that is given to the social life of those studied in order to be able to interpret it, and further, he has to acknowledge the intentionality behind the predictability or deviation therefrom – in the social life of those studies. Reflexivity and mindfulness, which are implied in the concept of the actor’s knowledgeability, are elements that set Structuration Theory apart from evolutionary approaches to organizational routines (Nelson and Winter 1982, Becker 2004). Hence, knowledgeability is a second central element in our analysis that captures a distinguishing core feature of

2.4 Structuration Theory.

In order for ‘recurrent social practices’ to become routines, and hence for structuration to occur, agents need to be knowledgeable of these practices. According to Giddens, ‘knowledgeability’ refers to actors’ knowledge in understanding their actions and the rules they follow. Action becomes continuous when actors know how to act in a certain situation and adjust their actions accordingly. Agency is reflexive to the extent

that it is informed by the past, oriented toward the future, and flexible in the present as it combines past and future within the contingencies of the moment (Emir-Bayer and Mische 1998). As Giddens puts it: 'It is the specifically reflexive form of knowledgeability of human agents that is most deeply involved in the recursive ordering of social practices' (1984, p. 3). Obviously, reflexivity requires that routines can be known, that actors can be aware of them, in order to recreate them in practice. In that sense, the duality of structure becomes apparent again.

In considering humans as purposive agents who act according to goals and are aware of these goals, Giddens (1984) advises treating terms such as 'purpose' or 'goals' with caution since it might put too much emphasis on the freedom of action granted to humans. For Giddens, power is a means to an end and becomes manifest in the actors' actions: 'Power is the capacity to achieve outcomes; whether or not these are connected to purely sectional interests is not germane to its definition.

Power is not, as such, an obstacle to freedom or emancipation but is their very medium' (Giddens 1984, p. 257).

He advocates the synthesis of structure-based and actor-based theories for addressing freedom of action, in which structures are seen as both enabling and constraining human action. Knowledgeability of the recursive ordering of social practices makes action possible, since it reduces anxiety or ontological insecurity felt by every human agent in an unpredictable world (Giddens 1984, 1991a). The actions can be seen as the transformative capacity of human agency: the actor can intervene in a series of events to alter their course, but not, thereby, escape from anxiety (Turner, 1986).

To Giddens, the importance of knowledgeability as a condition for action, is not so much in the actor's ability 'to put things into words' (Giddens 1984, p. 45), as it is in his consciousness of taken for granted actions. This practical consciousness is of primary concern in Structuration Theory since it entails a shift of focus from expression to the things that agents do, i.e. agency. If 'agency concerns [the] events of which an individual is the perpetrator, in the sense that the individual could, at any phase in a given sequence of conduct, have acted differently' (Giddens 1984, p. 9), then practical consciousness is required for actors to step out of daily routines. This knowledgeability does not mean that human actors are conscious about all of their actions, all of the time. Giddens speaks in this respect about the possibility of 'unacknowledged preconditions' and 'unintended consequences of action' (Giddens 1984, p. 294). But

this does not preclude the actor's ability to reflect upon the structural conditions of action. Such reflexivity results in a social (scientific) understanding which actually can change human activities. This dialectical relationship between knowledge and practice is labeled by Giddens as 'double hermeneutic'.

2.5 Time-space relations

A third guideline that Giddens offers is the suggestion to 'be sensitive to the time-space constitution of social life' (1984, p. 286). Indeed, as Urry (1991, p. 160) argues, 'Giddens has placed the analysis of time and space at the very heart of contemporary social theory', but he 'does not interrogate the concepts sufficiently'.

Time-space as developed by Giddens in his structuration theory has gained considerable critique. Willmott (2000) and Gregory (1989), for example, both argue that this aspect is relatively underdeveloped by Giddens; there is hence potential to learn from empirical studies how time-space might be made operational.

With regard to time-space issues, Giddens (1984, p. 286) argues that 'the social analyst must also be sensitive to the time-space constitution of social life'. At the same time he points out that 'social scientists have failed to construct their thinking around the modes in which social systems are constituted across time-space' (1984, p. 110). Social activities are primordially situated in time and space, in contextualities, that is, in which different routines are common. Modern, abstract systems (i.e. reproduced practices) bind space and time connecting local routines and rhythms with those at other places (far away). These spatial relationships are shaped – not determined – by non-local factors, and the other way around, local factors can have an impact on system's factors.

In a way, these are the institutional mechanisms (i.e. reproduced rules and resources) that 'lift out' social routines from local situations and restructure them across indefinite spans of space and time, thus transcending local actions (Giddens 1991a, p. 18). These disembedding mechanisms are distinguished by Giddens into: symbolic tokens (e.g. money) and expert systems (e.g. professions). In Giddens' words:

Symbolic tokens are the media of exchange which have standard value, and thus are interchangeable across a plurality of contexts ... Expert systems bracket time and space through deploying modes of technical knowledge which have validity independent of the practitioners and clients who make use of them.

(Giddens 1991a, p. 18)

Together he calls symbolic tokens and expert systems 'abstract systems' (Giddens 1991a, p. 20). The abstract systems are based on trust, which means that we rely consciously and unconsciously on the reliability of those systems.

An important concept for Giddens to relate time and space to structuration is reproduction. Social acts do not take place in isolation, but in subsequent replications over time, in recursive behavior. Actual power, in this respect, is demonstrated by the actions that transcend time and space, a phenomenon labeled by Giddens as distanced power (1984). Approaches in social science thus need a temporal element to deal with the reproduction of social behavior over time. Giddens introduces the concept of institution to describe a set of practices that is replaced over time and space, for example marriage. It is important to know that, for Giddens, the concepts of time and space themselves are constructed. That means that recursive practice is different in varying localities and times, but the conceptions of time and space are also re-enacted by the same practices.

3 DATA COLLECTION

We collected our data in May 2008 by searching in the ISI/Web of Science's Social Science Citation Index (SSCI) (all years available) for literature that either had the terms 'Structuration Theory' or 'Theory of Structuration' in the title, abstract or keywords. Only English articles with a subject area central to organization studies (i.e. Management, Business, Business Finance, Operations Research and Management Science and Public Administration) were included for the review.

In order to ensure a comprehensive review, we also sought literature through the SSCI cited reference search. We looked for articles that refer to either of the main publications on Structuration Theory: *Central Problems in Social Theory* (Giddens 1979) and *The Constitution of Society* (Giddens 1984). This supplementary search

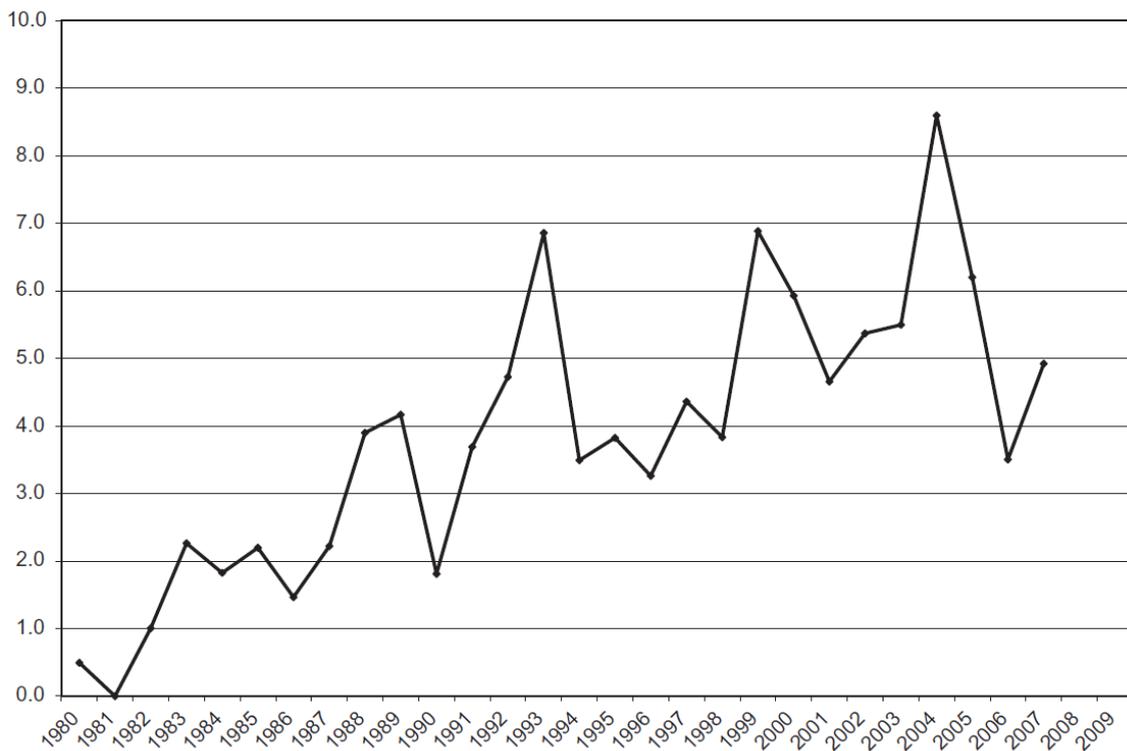


Figure 1 Relative attention to Giddens in selected journals (% of articles citing Giddens (1979) or (1984), n = 407).

indeed proved warranted, as it provided us with additional articles that did not always have Structuration Theory as the primary object of interest, though nonetheless employed its principles and concepts in empirical research. To narrow down the

resulting sample of studies to those within the field of organization studies, we restricted ourselves to those articles that were published in organization or organizational sociology journals, i.e. Academy of Management Review, Academy of Management Journal, Administrative Science Quarterly, American Journal of Sociology, American Sociological Review, British Journal of Management, Journal of Management Studies (JMS), Organization, Organization Science (OSC), Organization Studies (OSS) and MIS Quarterly.

Appendix 1 describes the steps we took in compiling our dataset. Through the combination of these two searches we identified a set of 407 articles, of which the content was reviewed for potential relevance to this article.⁴ Of these, 152 are theoretical articles. Because of our interest in empirical applications of Structuration Theory we excluded these from further analysis. Two articles were unavailable to the authors, thus resulting in a set of 253 articles for the review.

Our data seem to suggest that there has been a steady increase in attention to Structuration Theory in the field of organization studies. Because to some extent this increase may be an artifact of an overall increase in the production of academic articles, Figure 1 provides the percentage of articles in leading management and organization studies journals that refer to either Giddens (1979) or (1984). From our data we observe that empirical applications became more prevalent than theoretical contributions after the mid-1990s,⁵ and that almost 50% of all papers were published in three journals: OSS, JMS and OSC. In comparison to the field of information systems (Jones and Karsten 2008), it appears that in the field of organization studies relatively less empirical work has been grounded in Structuration Theory ($253/407 = 0.62$ for organization studies vs. $283/331 = 0.85$ for information systems).

3.1 Data analysis

Having thus described our dataset, we can now explain how we built up our analysis in two steps. First, we analyzed the substance of the referencing to Giddens and his Structuration Theory. To this end, we coded each of the empirical articles in our sample ($n = 253$) according to whether or not it related the empirical data to one or more of the three sensitizing concepts of Structuration Theory. We discern three different types of applications of Structuration Theory in our dataset. Those articles that refer to Giddens without actually applying Structuration Theory in their empirical analyses we labeled Giddens in passing (cf. Sallaz and Zavisca's (2007) phrasing of 'limited citation').

The second category of empirical applications of Structuration Theory we labeled Giddens à la carte, as the articles in this category apply one or two of the three sensitizing concepts in their empirical research. The third category we labeled Giddens full monty, as these articles explicitly apply all three sensitizing concepts of Structuration Theory in their empirical research.

Second, we identified some exemplary studies in their empirical application of Structuration Theory in order to illustrate how this theory might be used well. But unlike Locke (1996), in her discussion of the use of ‘grounded theory’ in the *Academy of Management Journal*, we do not have available a systematic reference work to which we can turn for the question of how Structuration Theory could or should be used. We therefore chose to invoke illuminating examples from our dataset and to see what can be learned from these examples. For the illustration we chose some well-known studies that we believe serve our purposes. Our objective here is to review empirical applications of Structuration Theory, and thereby make this issue an empirical one.

3.2 Giddens ‘in passing’, ‘à la carte’, and ‘full monty’

We found 188 empirical articles that make a passing reference to Giddens’ work. Such articles do not entail a clear empirical application of Giddens’ concepts, nor do they provide an analysis of the empirical results in terms of Structuration Theory. We found no clear patterns as to specific journals or themes in which passing referencing would seem to be particularly prevalent. Thus, using passing references to Structuration Theory and Giddens appear to be fairly common and randomly distributed.

There may be various reasons why authors would like to cite classical writings but not engage with them. Among such reasons could be a wish to position themselves vis-à-vis the classics (cf. Stinchcombe 1982), to make clear how their work deviates from the tradition, or – in the case of Structuration Theory – as a second-ary theoretical foundation (Pozzebon 2004). Indeed, Structuration Theory points the researcher to particular phenomena, but as a social theory has relatively little to say about the relationships between these phenomena, and therefore often is, or must, be supplemented by other theories, likely those of the middle-range (Whittington 2010).

Passing referencing to Giddens can thus be found in different contexts and appear to serve many different (and sometimes multiple) purposes: to provide a definition or conceptual elaboration of concepts such as ‘routine’, ‘power’ or ‘structure’ (e.g.

Browning et al. 1995, Hayward and Boeker 1998, Courpasson 2000, Lillrank 2003), to support or further the development of new theoretical frameworks (e.g. Brocklehurst 2001, Luo 2006), to explicate the theoretical and empirical works of other scholars (e.g. Carlson and Davis 1998, Boddy et al. 2000, Blackler and Regan 2006), to stress the co-evolution of agency and structure and/or argue for their conjoint exploration (e.g. Bartunek 1984, Miner 1991, Garud and Rappa 1994, Hoffman and Ocasio 2001, Thompson and Walsham 2004) or to stress that structures both constrain and enable the actions of actors (cf. Feldman and Rafaeli 2002, Bogenrieder and Nootboom 2004, Levina and Vaast 2005). But in other instances there was no apparent connection between references to Structuration Theory and the content of the argument made in the paper. In such cases, passing referencing becomes honorific, symbolic, or ritualistic (Stinchcombe 1982).

In this group of papers are also various empirical studies that employ Adaptive Structuration Theory (AST, DeSanctis and Poole 1994). For example Limayem et al. (2006) and Van Dolen et al. (2007) are variance-based experimental studies with structural features as independent variables. Maznevski and Chudoba (2000) use their grounded study of three global virtual teams to develop propositions on the characteristics of 'effective' global virtual teams that is cast in variance language, even if – arguably – there is the possibility of analyzing team effectiveness as a structuration process. Hence, the exclusion by Pozzebon and Pineault (2005) of such papers from their analysis may appear to be empirically justified. Although we see no a priori objections as to why quantification could not provide a helpful research approach in studying structuration process (Van de Ven and Poole 1995), in current AST studies the sensitizing concepts are not used, and hence the promise of process research is lost in variance research.

In 65 empirical articles we found a more direct and significant engagement with Structuration Theory. The authors of 50 out of these articles employ a 'pick-and-choose' approach to Structuration Theory – Giddens 'à la Carte', as it were – by applying one or two sensitizing concepts; arguably those that they deemed suitable or convenient for their analyses. In 15 articles the authors explicitly link their empirical findings to Structuration Theory and address the duality of structure, knowledgeability of actors, and time-space relations: i.e. Giddens 'Full Monty'. Duality of structure is more frequently addressed than the other two central concepts of Structuration Theory. When more than one central construct is used, the combination of duality and

knowledgeability is most frequently found. Later in this paper we will address the question of whether such a piecemeal fashion of applying Structuration Theory can actually be done without losing the very essence of the theory.

3.3 Empirical applications of structuration theory: an analysis

The challenge that Structuration Theory, due to its lack of clear methodological guidelines, has brought about for empirical application was the starting point of this analysis. So far we have presented an overview of how Structuration Theory has been empirically applied in the field of organization studies. Here, we intend to take the analysis a step further: to explore how Structuration Theory might be used well.

To this end we discuss a number of what we consider exemplary empirical studies. We then expand our discussion to address the appropriateness of Giddens à la carte.

3.4 Evaluating the analysis of duality

We found various ways in which researchers have proceeded to establish the duality of structure, including the identification of scripts, genres, and routines. The use of scripts has been explored by Barley (1986), Barley and Tolbert (1997). He advanced the hypothesis that identical technologies used in similar contexts can occasion different structures in an orderly fashion (1986, p. 81).⁶ If Giddens is right in considering structures as sets of routines and rules that guide day-to-day human actions, then the interaction between structure and agency can be made empirically visible by focusing on behavioral regularities (scripts) and changes therein. Scripts are 'observable, recurrent activities and patterns of interaction characteristic to a particular setting' (Barley and Tolbert 1997, p. 98). Since scripts shape structures, any changes in scripts over time would result in a change in structure. Subsequently, scripts derived from this altered structure should be different from earlier scripts. However, Barley and Tolbert (1997) stress that changes in scripts alone are not enough to infer structuration: other possible influencing factors should be considered and evidence of structural change should be found outside the research setting, too. If these conditions are met, the documentation and investigation of scripts, and changes therein, can provide insight into the relationship between structure and agency. For instance, Barley (1986) identified scripts in a longitudinal study, by meticulously recording the interaction between radiologists and technicians, and then inferred how their social order changed in radiology departments. Although much

cited, we find little direct following of Barley's use of scripts in our dataset; Black et al. (2004) who follow up on Barley is an exception.

Further means have been explored to investigate empirically the duality of structure. For example, Yates and Orlikowski (1992) argue that the notion of 'genre' provides a useful analytical lens in studying the structuring of communicative practice in organizations. Genres of organizational communication are defined as 'socially recognized types of communicative actions – such as memos, meetings, expense forms, training seminars – that are habitually enacted by members of a community to realize particular purposes' (Orlikowski and Yates 1994, p. 542).

How such genres emerge, institutionalize, and change, by influencing how members of a community communicate, and by being modified when members introduce variations in substance and form, is seen as a process of structuration in communication. Orlikowski and Yates (1994) show how different genres can be identified in e-mail messages.

Feldman (2000, 2003, 2004) proceeds by elaborating the notion of 'routines' as a way to study the duality of structure. Routines are 'temporal structures that are often used as a way of accomplishing organizational work' (Feldman 2000, p. 611). In her study of a student housing department of a large US State University, she analyzed various routines, including hiring, training, budgeting and closing up residence halls. On the one hand, such routines provide stability and direction to organization members, which are in line with received understanding of what routines are, and how they structure behavior. On the other hand, Feldman also found that the routines she studied changed more significantly, more often, and more quickly than implied in, for example, Cyert and March's (1992, p. 120-ff.) conceptualization of standard operating procedures, and much more reflectively than is implied in the random variation that characterizes change in evolutionary conceptualization of routines (e.g. Campbell 1965, Nelson and Winter 1982). Thus, routines should be studied as they are enacted (Feldman and Pentland 2003). Structuration is implied as their enactment both creates and builds on resources, leading to different out-comes of the process (Feldman 2004).

In the above analysis, the implied suggestion is that the analysis of duality is most productively done in studies that due to their content might be classified as 'organizational behavior' studies. Considering the list of studies that we compiled confirms this suggestion: most address topics involving interaction and practices

among relatively small numbers of individuals within organizational settings. But there are exceptions.

For example, Windeler and Sydow (2001) studied the coevolution of 'organizational forms (such as markets, firms, networks) and industries' (p. 1042) through the mutual constitution of 'industry practices' and '(inter-)organizational practices' in the context of the German TV-industry. Here, practices are to be understood as the emerging regularities in coordination mechanisms at the level of project collaboration in the production of TV-programs between the professionals affiliated to various firms, as reflexively developed by program editors and producers. In a study on the network collaboration between seven insurance brokers in Germany, Sydow 'investigates the influence that certain evaluation practices have on the evolution of an interfirm network, [as well as] the meaning of a certain stage of network development for network evaluation practices' (Sydow, 2004, p. 202).

'Discourse' may be another concept through which to study structuration in the realm of 'organizational theory'. Lawrence and Phillips (2004), for example, suggest that the structuration of commercial whale-watching in British Columbia, Canada, as a new institutional field occurred through the blending of a changed macrocultural discourse and local action interpreted as institutional entrepreneurship. Even if Lawrence and Phillips do not empirically show in their study how the local action, notably the discourse in institutional entrepreneurship, reinforced, or more or less subtly changed, the newly emerged macro-cultural discourse of (killer) whales as worthy of empathy, it might from a structuration viewpoint reasonably be assumed that such would have happened. But showing it empirically may have required bracketing a longer period of time for the study.

Similar among scripts, genres, routines, practices, and discourses, is that they refer to recurrent patterns of activity and interaction. They are dualities in that they have elements of structure in them (signification, domination, and legitimation) as well as elements of action (communication, power, and action). For example, the ostensive dimension of an organizational routine – its ideal or schematic form (Feldman and Pentland 2003) – informs behavior in organizations by suggesting what people should do and helping others to attach significance and meaning to what these people do, whereas in its performative dimension – the specific actions taken by specific people at specific times when they are engaged in a routine (Feldman and Pentland 2003) – these people become actors that may mindfully reproduce or deviate from the routine,

give reasons for doing so, reflect on the outcomes, force others to do similarly, and eventually affect on its ostensive dimension. This is a crucial characteristic for any method to analyze the duality of structure: it must allow the analyst to observe its constitution and reconstitution through the modalities of structuration. Although studying such dualities requires longitudinal study designs, and sometimes meticulous recording and coding, they do lend themselves to both qualitative and quantitative methods of data analysis, as is shown by the exemplary studies above.

Evaluating the analysis of knowledgeability Key terms in describing knowledgeability in the role of the agency are reflexivity (almost all of the authors, but especially Macintosh and Scapens 1990, Heracleous and Barrett 2001), the ability to act otherwise (Akgün et al. 2007), changing attitudes (Walsham 2002), learning (Berends et al. 2003, Bresnen et al. 2004), mindfulness and flexibility in the enactment of routines (Feldman 2003, Howard-Grenville 2005) and strategic action (Macintosh and Scapens 1990, Windeler and Sydow 2001). Although it becomes clear from the articles in our sample that knowledgeability is seen as the individuals' knowledge to understand their actions and the rules they follow, there is no dominant set of instruments and methods with regard to the analysis of knowledgeability.

We found various methodologies, approaches and methods with which knowledgeability has been studied. Among these, the interpretative, qualitative and holistic case study methodologies are dominant. The grounded theory method is used for narrative analysis and for finding patterns in empirical data (e.g. Coopey et al. 1998, Berends et al. 2003). With regard to methods, interviewing is a dominant approach in our sample. For example, Duberley et al. (2006) studied knowledgeability through the narratives of interviews; Edwards (2000) makes visible knowledgeability in highlighting the strategic goal-oriented posture of the actors involved; Orlikowski and Yates (1994) used interviews to interpret and thereby (re)construct genres in their collection of email messages. These authors use a mixture of methods including interviews (often quantified), documentary analysis and observation techniques.

On the basis of these papers, we find that knowledgeability is a relatively under-developed concept for empirical analysis. By relying on narratives of interviews, the identification of knowledgeability may result in the ex-post imposition of reflex the breach' (Duneier and Molotch 1999, p. 1289) showing us our tacit understanding of our daily routines and practices. Problematic in Garfinkel's approach however, is that

'ethnomethodology has not analyzed the way in which the structure of practices allows them to bind time and space' (Hartland 1995).⁷

Yet another way to proceed could be to invoke Weick's idea of sensemaking (1979, 1995, 2001). This approach can contribute to the problem of knowledgeability because sensemaking is about the linkage between the individual cognition and collective, organizational properties, such as 'collective mindfulness' (Levinthal and Rerup 2006). Several authors in our sample make suggestions in this direction, and do so in combination with ethnographic methods (e.g. Sandfort 2003, Boudreau and Robey 2005, Howard-Grenville 2005), historical analysis (Yates and Orlikowski 1992, Orlikowski and Yates 1994), or learning and change (Hargadon and Fanelli 2002, Feldman 2004). Weick's idea on sensemaking has been used to express reflective behavior and to illustrate that organizational phenomena are accomplished and executed rather than pre-existing. Boudreau and Robey for example used Weick to pay attention to improvisation, which 'portray actors deviating from plans' (Boudreau and Robey 2005, p. 5). Others used the concept of enactment to describe how actions are actualized and ideas realized (e.g. Orlikowski and Yates 1994, Heracleous and Barrett 2001). Enactment is a construct that 'explains that individuals come to act in patterned ways in response to existing socially constructed temporal rhythms' (Perlow 1999, p. 58). However, although Weick's famous expression 'How can I know what I think until I see what I say' clarifies the concept of sensemaking, this can be done only in retrospect. In other words, as in the case of the previously discussed approaches, sensemaking and enactment do not enable the researcher to observe exactly how the relation between the individual's cognition and the social is accomplished.

To empirically establish the actor's knowledgeability is thus problematic. The various approaches help the researcher to get close to the actor, but not close enough to empirically establish knowledgeability, as our appraisal of above shows. According to Macintosh and Scapens (1990), it would require bringing in 'the agent's psychological functioning' and other psychological factors.⁸ However, if one were to do so – to focus in such detail on the individual's mind – there is the risk of losing sight of the process in which the actor is involved and of its interaction and engagement with others, and by that on the very process of structuration. The analysis of structuration, after all, requires that the analyst focuses on interaction and process. The two seem to make a difficult match.

Quite a different solution might therefore be worthwhile pondering. It would be to simply treat knowledgeable as a fundamental assumption of human behavior, as ‘human beings, in the theory of structuration, are always and everywhere regarded as knowledgeable agents’ (Giddens 1995, p. 265). Particularly in the context of the organization – we are still in the domain of organization studies – such an assumption might not be entirely out of order. Much organizational behavior is informed by tasks, ambitions, and assignments, and role-guided by organizational, professional, et cetera norms, i.e. the sort of behavior that is executed with at least a minimum of awareness, if not reflexive in action. And to the extent that such behavior is relevant to, observed by, or jointly produced with others, it is at least partially planned or performed with an awareness of the other (cf. impression management, Goffman 1959). For example, Windeler and Sydow take this position when they suggest that ‘agents selectively actualize [institutions, i.e. structure as rules and resources] in their interactions and continually reproduce (or, perhaps, transform) them in and through situated interactions’ (2001, pp. 1040–1041). They continue to say that ‘Only the usage of these resources, oriented by the prevailing rules of signification and legitimation, [that] enables firms to augment these very resources and [thereby] to satisfy shareholders’ interests’ (Windeler and Sydow 2001, p. 1041), but also point out the ‘unintended consequences of otherwise intentional action’ (Windeler and Sydow 2001, p. 1056).

3.5 Evaluating the analysis of time-space

Time-space is less frequently used than the other two sensitizing concepts. However, to the extent that it is applied, time is more often addressed than space (an exception is Cooney 2007). In most instances, time is addressed through the means of temporal bracketing. Space is almost absent in the literature we reviewed. Exemplars of how time-space has been addressed are historical analysis (Orlikowski and Yates 1994, Berends et al. 2003), longitudinal field study (Macintosh and Scapens 1990, Heracleous and Barrett 2001, Bresnen et al. 2004), temporal structuring (Orlikowski and Yates 2002) and analysis of embedded routines and roadmapping (Howard-Grenville 2005).

Brocklehurst (2001) takes the other way around, assessing the extent to which Structuration Theory can help to understand the phenomenon of ‘new technology homework’. Such homeworking, he suggests, influences power and identity, and the stretching of space and time influences these processes. Brocklehurst combines

Giddens' idea that in late modernity individual actors constantly work at (re)creating their identity with the notion that new technologies (ICT's as 'expert systems')

enable the employees working at home to become separate from their managers and co-workers. In such situations the individual employees' lives become more desynchronized and social (work) relationships increasingly distanced. Brocklehurst

found that the employees working at home recreated office-space routines and rules at home, thereby seeking to diminish their anxiety stemming from the new situation. Giddens' Structuration Theory is helpful in understanding such processes.

The explanation for the relatively little use of the time-space concept, may be found in Structuration Theory, where Giddens describes the time-space dimension as both the frame in which structuration takes place, but also as a structure in and of itself. Context and history influence the interplay between actor and structure, and recursive practices vary according to their location and timing. Simultaneously, time and space and their conception are constructed and re-enacted through these practices (see also: Gross 1982). This theoretical obscurity of the time-space dimension is also present in the articles in the review, and has provided difficulties for coding. Apparently, in the field of organization studies, taking account of the influence of context and time seems to warrant the statement that the time-space dimension is included in the study. In the current review however, this claim is contested. When coding, context dependence was considered not 'enough' to deserve the label of time-space inclusion. This decision may have caused the relative absence of the time-space sensitizing concept, and is thus open for discussion.

A relevant question is what time span would be most appropriate to study the interplay between action and structure. The rate by which action is replicated determines at what intervals researchers will have to search for changes in structures and actions, and hence, for how to apply temporal bracketing. For instance, if Lawrence and Phillips (2004) had been interested in investigating whether and how commercial whale-watching might have reinforced or subtly changed the macro-cultural discourse that enabled the emergence of this activity as an institutional field, they probably should have adopted a longer timeframe. The question has implications for the discovery of micro vs. macro processes of change.

In the articles reviewed here, the duration of the intervals, seems to be determined by the research subject. When studying the influence of government policy on university budgeting strategies (e.g. Jarzabkowski and Wilson 2002), the appropriate time span for observing changes is probably larger than for the interplay between employees and organizational routines (e.g. Edwards 2000). The suitability of Structuration Theory for explaining change in structures makes it an appealing theory for studying micro processes. In these micro processes the replication rate of routines is likely to be higher and therefore more susceptible to change. When a study aims to explain the influence of macrostructures, Structuration Theory, though perhaps more theoretically appealing, is not necessarily a more convenient analytical tool than other theories. Macro structures have a lower replication rate and are therefore more stable over time. Consequently, one can analyze such structures just as accurately, while assuming this stability, by using frameworks emanating from structuralism and functionalism. Herein probably lies an explanation for the relative absence of empirical studies drawing upon Structuration Theory in the domain of organization theory.

4 DISCUSSION AND CONCLUSION

In contrast to Gregson's (1989) assertion that Structuration Theory is irrelevant to empirical research, we found quite a few empirical studies in the field of management and organization studies that do engage with Structuration Theory. If we assume that the increase in the number of citations to Structuration Theory is a popular vote on the opposing views by Gregson and Giddens on the question of whether or not second-order theory is able to inform or inspire empirical research, and if we also assume that Gregson's argument is widely known among the group of scholars engaging with Structuration Theory, then Gregson lost. In this paper we tried to answer the question of how Giddens was used empirically in the field of organization studies.

We discussed a few exemplary studies in order to appraise how Structuration Theory might be applied well in the field of organization studies. Whittington (2010, p. 109) argues that 'Structuration theory mandates full-spectrum research: the wide-angled analysis of institutions, as well as the microscopic study of praxis'. Having said all this, the question comes up: is 'more Giddens' better? Our response to this – on the basis of our data – is: there is no clear answer. Giddens prefers a 'sparing and critical' use of elements of Structuration Theory (Giddens 1991b, p. 213). We did find some instances in which 'more Giddens' might have enhanced the analysis.

For example, Boudreau and Robey (2005) is one of the two studies in which knowledgeability and time-space was being used, but not the duality of structure. The question asked is: How do workers cope with the introduction of a highly inflexible software system in their agency? If this software is considered a significant part of structure, then that may be part of the reason why duality was not explicitly considered in this study. However, their findings reinforce Orlikowski's (2000) conclusion that experimentation and improvisation may help explain how new technologies are organized and used in practice. Hence, if structure is in the developing routines, and if the access that workers gradually gained is the resource that this software system also is, then the inclusion of duality in the analysis – e.g. by asking which workarounds became stable and diffused, and why these did but others not – might have greatly deepened the analysis. Reflexivity was inferred from interviews, but also from participant observation. Time-space enters through the use of temporal bracketing, in the identification of various stages in the process by which workers learned to cope with the software. The example seems to suggest that more Giddens is better. It echoes

Jones and Karsten's (2008, p. 145) comment, albeit in a slightly different context, that: [information systems] research that focuses on observable facts to the neglect of social actors' knowledgeability and reflexivity, that seeks to employ structuration in pursuit of invariant social laws, ... is at odds with central principles in Giddens' position and would seem to risk missing some of its key insights.

Building on our example and this comment, we could suggest that the comment might be expanded to include the neglect of time-space, and also that it is equally relevant to the field of organization studies. In that sense, a more comprehensive engagement with Structuration Theory – more Giddens – increases the likelihood of a logically coherent empirical analysis. But there are some countervailing arguments, which might also explain our finding that there are actually few instances of empirical research in which all three sensitizing concepts are simultaneously being addressed. In particular, time-space is used to a lesser extent than the other two sensitizing concepts. One explanation could be that carrying out such an analysis is a lot of difficult work and requires tedious data collection and meticulous coding. In short, it is a 'hell of a job', or in a more positive wording, it requires a 'commitment to intense and intimate research engagement' (Whittington 2010, p. 120). A more nuanced explanation builds on the distinction between the 'analysis of strategic action' and 'institutional analysis' (Giddens 1979, p. 80-ff.), and a supposed preference for the former in empirical studies of Structuration Theory in organization studies, because it speaks more directly to the widely shared interest that organization scientists have in managerial agency and strategic choice in organization studies (Whittington 1992, 2010).

A focus on the analysis of strategic conduct was prominent in many empirical studies on Structuration Theory. The notion of a duality implies that the focus of attention should be on recursive practices, and how they change. This focus on action is especially visible in the articles that constitute full empirical studies of the theory, and is therefore considered to be one of the necessary conditions for studying the duality between structure and agency.⁹

As a consequence of this focus on the analysis of strategic conduct, much of the research discussed here is conducted at the micro-level. Individuals are considered to be the most important actors, although aggregates of individuals are studied as well. Whereas our review pertains to research in the field of organization studies, this finding may well be applicable to research on Structuration Theory more generally. For when studying structuration, a focus on recursive practices, actions and thus the macro-level

seems inevitably. Further, if Macintosh and Scapens (1990) are right in their suggestion that psychological factors need to be brought into the analysis in order to establish the actor's knowledgeability, it is likely that this focus on the micro-level is reinforced.

We suggest that the focus on the analysis of strategic conduct in organization studies, may render it difficult to integrate time-space into the analysis, and thereby result in a relative neglect of supra-organizational – or 'macro' – processes. The latter would be implied in the analysis of time-space as intended by Giddens. It could thus well be that for all practical means there is a trade-off in addressing knowledgeability vs. time-space.

Building on Whittington's observation that organization scientists have 'neglected [Giddens'] commitment to multidimensional social systems' (1992, p. 707) is yet another way to address this question. On the one hand, the studies in our sample largely focus on intra-organizational phenomena, which would concur with Whittington's observation. On the other hand, these phenomena might indeed be restricted to the single social system of the firm, or the department therein, which would suggest that there is no need to consider the confluence of multiple social systems. However, some organizational phenomena do involve multidimensional social systems, such as 'strategy' as an institution (Whittington 2010), the development of professions (Abbott 1988, Adler et al. 2008), or the dynamics of inter-organizational networks (Sydow 2004). And precisely in studies that deal with such phenomena, we find relatively little referencing to Giddens' work. Yet, through constructs such as practices and discourses, structuration has also been made visible at the inter-organizational level of analysis.

A final suggestion we wish to make concerns the value of Structuration Theory for management and organization studies. We have increasingly come to appreciate Structuration Theory, not as a meta-theory, nor as a broad framework for, or general premise underlying, empirical research (cf. Pozzebon 2004), nor as a second-order theory (Gregson 1989, p. 245), but as a process theory that offers a distinct 'building block' (Van de Ven and Poole 1995, p. 510) or 'sensitizing device' (Langley 2009) for explaining processes of change in and around organizations. Viewing Structuration Theory in this way perhaps reveals its greatest potential for management and organization studies. Structuration, then, complements previously identified building blocks for explaining process, such as 'life cycle', 'teleology', 'dialectics', and 'evolution' (Van de Ven and Poole 1995). Van de Ven and Poole listing is 'hard to see as

exhaustive' (Langley 2009, p. 418). Similar to these building blocks, structuration is another example of what Abbott calls the 'syntactic explanatory program', i.e. explanation based on the abstract modeling of action and interrelationships in the social world (Abbott 2004, p. 28). However, Structuration Theory is distinct from the four process theories that Van de Ven and Poole (1995) identified. Structuration differs from life cycle and teleology in two main respects: there is no direction in the process of change, and it involves multiple entities. Although it shares the involvement of multiple entities, structuration differs from dialectics and evolution in other ways. Whereas variation within evolution is a random process, structuration is not, due to the knowledgeability of agents. Finally, structuration is distinct from dialectics, as it does not presuppose the existence of opposition or contradiction in values or interests as a driver of change. The driver of change is in the action itself. For example, scripts emerged out of (inter)action and changed during interaction; as dualities they embody the process of structuration. Therefore, we propose to view structuration, as an exemplified and made visible in scripts, routines, genres, practices, and discourses, as a distinct building block for analyzing processes of change.

ACKNOWLEDGEMENTS

We would like to thank Marshall Scott Poole, Dvora Yanow, Peter Groenewegen, Ann Langley and Stewart Clegg for their constructive feedback on earlier versions of this paper.

NOTES

- 1 Archer (e.g. Abbott 1988) argues that by 'conflating' structure and agency, Giddens makes application of Structuration Theory in empirical research impossible. In this debate, we agree with those authors who consider this critique of Giddens as 'misplaced' (Jones and Karsten 2008, p. 132, see also Stones 2005). The issue was addressed by Giddens, e.g. in the discussions around 'institutional analysis' and 'the analysis of strategic action'. Further, structure, as rules of conduct and rights to resources, is not only instantiated and reproduced in action, but also transmitted over time and space, e.g. in memory traces and through symbolic tokens (Giddens 1984, p. 17). Thus,

the separation of structure and agency, needed for analytical purposes, is not only an analytical dodge, but in some cases empirical reality.

- 2 Other attempts include: Archer's (1982, 1988, 1995) theory of morphogenesis, Berger and Luckmann's (1967) social construction of reality, Bourdieu's (1977, 1980) theory of practice, actor-network theory (Callon 1986, Latour 1987), Habermas' (1987) account of the relations between the system world and the life world, Sewell's (1992) theory of structure, Stryker's (1980) structural symbolic interactionism, Sztopka's (1991) theory of social becoming. A discussion on the question of which of these attempts is 'better' in resolving the structure-agency problem, or which lends itself 'more' to empirical investigation, is beyond the scope of this paper (see Pozzebon 2004 for a discussion of the issue; she argues that there is no 'better' solution, and that a choice among the various alternatives is often a matter of ontological affinity). Our starting point is simply the observation that Structuration Theory has informed the field of organization studies to a non-negligible degree.
- 3 For more elaborate and critical discussions, see e.g. Bryant and Jary (1991), Jones and Karsten (2008) and Stones (2005).
- 4 A complete list of all 407 references can be obtained from the authors. Due to limitations in the coverage of ISI/Thompson Web of Science, we are sure to have missed out a number of references to Giddens' work in the 1980s, as a comparison between our work and the literature list in Whittington (1992) quickly reveals. However, their small numbers suggest that the inclusion of such papers would not have altered our conclusions. For a further discussion of the consequences of relying on electronic sources for bibliographic research, see e.g. de Bakker et al. (2006).
- 5 Given the increase in the number of – empirical – Structuration Theory-based publications in the field of organization studies, Whittington's (1992) complaint about the neglect of Giddens' work in the field of organization studies has arguably proven effective.
- 6 The point here is not whether 'social practices ... constitute institutions synchronically while institutions constrain action diachronically' (Barley 1986, pp. 82–83), or whether 'social behaviour constitute institutions diachronically,

while institutions constrain action synchronically' (Barley and Tolbert 1997, p. 100). Our focus is on how the interaction can be made visible in empirical research. In fact, the two hypotheses – rival or complementary – can be seen conceptually as a consequence of the very notion of the duality of structure.

- 7 Perhaps the unobtrusive use of video recording techniques, using multiple cameras, may be helpful in developing such thick descriptions and following the actor, by separating in time and space the processes of data collection and coding. If subsequently the actors are interviewed about their knowledgeability, perhaps supported by showing them relevant pieces of the recordings, a sort of triangulation between the analyst's interpretation and the actor's ex-post rationalization may be attempted. However, the fundamental problem of empirically establishing the actors knowledgeability remains the same.
- 8 New technologies have also had an impact on data collection and analysis; the availability of increasingly sophisticated digital audio-video recording equipment and software has made possible significant advances in the study of gesture and nonverbal behavior [...], for example, and has enabled researchers to accomplish unprecedented micro-level analyses of both verbal and nonverbal aspects of human interaction' (Garrett and Baquedano-López 2002, p. 343).
- 9 If in the comparison between e.g. Bourdieu's structuralist constructivism, his theory of practice (Bourdieu 1977, 1980), and Structuration Theory, the conventional suggestion is that Bourdieu's approach is more conducive to explaining reproduction (or stability), and Giddens' more to change, then a relevant question is whether Giddens' approach might also be productively used to explain reproduction. Our data set does not give a clear answer to this question.

NOTES ON CONTRIBUTORS

Frank den Hond is an associate professor at the Department of Organization Sciences, in the Faculty of Social Sciences of VU University Amsterdam. His primary research interest lies in the intersection of institutional organization theory, social movement theory, and corporate social responsibility. He has published in various journals,

and co-edited *Managing Corporate Social Responsibility in Action: Talking, Doing and Measuring* (Ashgate, 2007). He is a senior editor with *Organization Studies*.

Kees Boersma is an associate professor at the Department of Organization Sciences, in the Faculty of Social Sciences of VU University Amsterdam. His research interest is in 'science and technology studies', 'disaster management and crisis response', and in 'organization culture'. He publishes on R&D management, learning and organizational culture and disaster management. His publications have appeared among others in journals such as *Enterprise and Society*, *Business History*, *Human Relations and Tertiary Education and Management*. He lectures on *Organizational Behavior*, *Organizational Politics and Technology and Culture*.

Leonie Heres, MSc, is a PhD candidate at the Department of Governance Studies, in the Faculty of Social Sciences of VU University Amsterdam. Leonie's current research focuses on organizational ethics and leadership. Recent work has been accepted for publication in the *International Journal of Leadership Studies*, *Public Management Review*, and the *Journal of Change Management*.

Eelke Kroes, MSc, is a management consultant with *&samhoud*. He works in national and international projects in the fields of strategy, change management and implementation in the following markets: financial industry, telecom and manufacturing.

Emmie van Oirschot, MSc, is customer intelligence analyst in the fundraising industry, at *Goede Doelen Loterijen N.V.* She generates fact-based insights from customer data and translates them into marketing practice. She specializes in targeted marketing and customer retention.

REFERENCES

- Abbott, A., 1988. *The system of professions: an essay on the division of expert labor*. Chicago, IL: University of Chicago Press.
- Abbott, A., 2004. *Methods of discovery: heuristics for the social sciences*. New York, NY: W. W. Norton.
- Adler, P.S., Kwon, S.-W., and Heckscher, C., 2008. Professional work: the emergence of collaborative community. *Organization Science*, 19 (2), 359–376.
- Akgün, A.E., Byrne, J., and Keskin, H., 2007. Organizational intelligence. A structuration view. *Journal of Organizational Change Management*, 20 (3), 272–289.
- Archer, M.S., 1982. Morphogenesis versus structuration. *British Journal of Sociology*, 33, 455–483.
- Archer, M.S., 1988. *Culture and agency: the place of culture in social theory*. Cambridge: Cambridge University Press.
- Archer, M.S., 1995. *Realist social theory: the morphogenetic approach*. Cambridge: Cambridge University Press.
- Barley, S.R., 1986. Technology as an occasion for structuring: evidence from observations of CT scanners and the social order of radiology departments. *Administrative Science Quarterly*, 31 (1), 78–108.
- Barley, S.R. and Tolbert, P.S., 1997. Institutionalization and structuration: studying the links between action and institution. *Organization Studies*, 18 (1), 93–117.
- Bartunek, J.M., 1984. Changing interpretive schemes and organizational restructuring. The example of a religious order. *Administrative Science Quarterly*, 29 (3), 355–372.
- Becker, M.C., 2004. Organizational routines: a review of the literature. *Industrial and Corporate Change*, 13 (4), 643–678.
- Berends, H., Boersma, F.K., and Weggeman, M., 2003. The structuration of organizational learning. *Human Relations*, 56 (9), 1035–1056.
- Berger, P.L. and Luckmann, T., 1967. *The social construction of reality*. New York, NY: Garden City.

- Black, L.J., Carlile, P.R., and Repenning, N.P., 2004. A dynamic theory of expertise and occupational boundaries in new technology implementation: building on Barley's study of CT scanning. *Administrative Science Quarterly*, 49 (4), 572–607.
- Blackler, F. and Regan, S., 2006. Institutional reform and the reorganization of family support services. *Organization Studies*, 27 (12), 1843–1861. 25
- Blumer, H., 1954. What is wrong with social theory? *American Sociological Review*, 19, 3–10.
- Boddy, D., Macbeth, D.K., and Wagner, B.A., 2000. Implementing collaboration between organizations: an empirical study of supply chain partnering. *Journal of Management Studies*, 37 (7), 1003–1017. Bogenrieder, I. and Nootboom, B., 2004. Learning groups: what types are there? A theoretical analysis and an empirical study in a consultancy firm. *Organization Studies*, 25 (2), 287–313.
- Boudreau, M.-C. and Robey, D., 2005. Enacting integrated information technology: a human agency perspective. *Organization Science*, 16 (1), 3–18. Bourdieu, P., 1977. *Outline of a theory of practice*. Cambridge: Cambridge University Press.
- Bourdieu, P., 1980. *The logic of practice*. Chicago, IL: Stanford University Press.
- Bresnen, M., Goussevskaia, A., and Swan, J., 2004. Embedding new management knowledge in project-based organizations. *Organization Studies*, 25 (9), 1535–1555.
- Brocklehurst, M., 2001. Power, identity and new technology homework: implications for 'new forms' of organizing. *Organization Studies*, 22 (3), 445–466.
- Browning, L.D., Beyer, J.M., and Shetler, J.C., 1995. Building cooperation in a competitive industry. *Sematech and the semiconductor industry*. *Academy of Management Journal*, 38 (1), 113–151.
- Bryant, C.G.A. and Jary, D., 1991. *Giddens' theory of structuration. A critical appreciation*. London: Routledge.
- Callinicos, A., 1985. Anthony Giddens. A contemporary critique. *Theory and Society*, 14 (2), 133–165.
- Callon, M., 1986. Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc bay. In: John Law, ed. *Power, action and belief: a new sociology of knowledge?* London: Routledge and Kegan Paul, 196–233.

- Campbell, D.T., 1965. Variation and selective retention in socio-cultural evolution. In: H.R. Barringer, G.I. Blanksten, and R.W. Mack, eds. *Social change in developing areas: a reinterpretation of evolutionary theory*. Cambridge, MA: Schenkman, 19–49.
- Carlson, P.J. and Davis, G.B., 1998. An investigation of media selection among directors and managers: from 'self' to 'other' orientation. *MIS Quarterly*, 22 (3), 335–362.
- Clayman, S.E., 1989. The production of punctuality: social interaction, temporal organization, and social structure. *American Journal of Sociology*, 95 (3), 659–691.
- Clegg, S., Courpasson, D., and Phillips, N., 2006. *Power and organizations*. London: Sage.
- Cooney, K., 2007. Fields, organizations, and agency: toward a multilevel theory of institutionalization in action. *Administration and Society*, 39 (6), 687–718.
- Coopey, J., Keegan, O., and Emler, N., 1998. Managers' innovations and the structuration of organizations. *Journal of Management Studies*, 35 (3), 263–284.
- Courpasson, D., 2000. Managerial strategies of domination. Power in soft bureaucracies. *Organization Studies*, 21 (1), 141–161.
- Cyert, R.M. and March, J.G., 1992. *A behavioral theory of the firm*. 2nd ed. Malden, MA: Blackwell.
- de Bakker, F.G.A., Groenewegen, P., and den Hond, F., 2006. A research note on the use of bibliometrics to review the corporate social responsibility and corporate social performance literature. *Business & Society*, 45 (1), 7–19.
- DeSanctis, G. and Poole, M.S., 1994. Capturing the complexity in advanced technology use: adaptive Structuration Theory. *Organization Science*, 5, 121–147.
- Duberley, J., Cohen, L., and Mallon, M., 2006. Constructing scientific careers: change, continuity and context. *Organization Studies*, 27 (8), 1131–1151.
- Duneier, M. and Molotch, H., 1999. Talking city trouble: interactional vandalism, social inequality, and the 'urban interaction problem'. *American Journal of Sociology*, 104 (5), 1263–1295.
- Edwards, T., 2000. Innovation and organizational change: developments towards an interactive process perspective. *Technology Analysis & Strategic Management*, 12 (4), 445–464.
- Emirbayer, M. and Mische, A., 1998. What is agency? *American Journal of Sociology*, 103 (4), 962–1023.

- Feldman, M.S., 2000. Organizational routines as a source of continuous change. *Organization Science*, 11 (6), 611–629.
- Feldman, M.S., 2003. A performative perspective on stability and change in organizational routines. *Industrial and Corporate Change*, 12 (4), 727–752.
- Feldman, M.S., 2004. Resources in emerging structures and processes of change. *Organization Science*, 15 (3), 295–309.
- Feldman, M.S. and Pentland, B.T., 2003. Reconceptualizing organizational routines as a source of flexibility and change. *Administrative Science Quarterly*, 48 (1), 94–118.
- Feldman, M.S. and Rafaeli, A., 2002. Organizational routines as sources of connections and understandings. *Journal of Management Studies*, 39 (3), 309–331.
- Fuchs, S., 2001. Beyond agency. *Sociological Theory*, 19 (1), 24–40.
- Garrett, P.B. and Baquedano-López, P., 2002. Language socialization: reproduction and continuity, transformation and change. *Annual Review of Anthropology*, 31, 339–361.
- Garud, R. and Rappa, M.A., 1994. A sociocognitive model of technology evolution. The case of cochlear implants. *Organization Science*, 5 (3), 344–362.
- Geertz, C., 1973. *The interpretations of cultures*. New York, NY: Basic Books.
- Giddens, A., 1979. *Central problems in social theory: action, structure, and contradiction in social analysis*. Berkeley, CA: University of California Press.
- Giddens, A., 1984. *The constitution of society: outline of the theory of structuration*. Cambridge: Polity Press.
- Giddens, A., 1989a. A reply to my critics. In: David Held and John B. Thompson, eds. *Social theory of modern societies: Anthony Giddens and his critics*. Cambridge: Cambridge University Press, 249–301.
- Giddens, A., 1989b. *Sociology*. Cambridge: Polity Press.
- Giddens, A., 1991a. *Modernity and self-identity. Self and society in the late modern age*. Stanford, CA: Stanford University Press.
- Giddens, A., 1991b. Structuration theory: past, present and future. In: Christopher G.A. Bryant and David Jary, eds. *Giddens' theory of structuration: a critical appreciation*. London: Routledge, 201–221.

- Giddens, A., 1995. *Politics, sociology and social theory: encounters with classical and contemporary social thought*. Cambridge: Polity Press.
- Goffman, E., 1959. *The presentation of self in everyday life*. New York, NY: Free Press.
- Gregory, D., 1989. Presences and absences: time-space relations and structuration theory. In: David Held and John B. Thompson, eds. *Social theory of modern societies: Anthony Giddens and his critics*. Cambridge: Cambridge University Press, 185–214.
- Gregson, N., 1989. On the (ir)relevance of Structuration Theory to empirical research. In: David Held and John B. Thompson, eds. *Social theory of modern societies: Anthony Giddens and his critics*. Cambridge: Cambridge University Press, 235–248.
- Gross, D., 1982. Time-space relations in Giddens' social theory. *Theory, Culture & Society*, 1 (2), 83–88.
- Habermas, J., 1987. *The theory of communicative action (Volume 2). Lifeworld and system: a critique of functionalist reason*. Boston, MA: Beacon Press.
- Hargadon, A.B. and Fanelli, A., 2002. Action and possibility: reconciling dual perspectives of knowledge in organizations. *Organization Science*, 13 (3), 290–302.10
- Hartland, N.G., 1995. Structure and system in Garfinkel and Giddens. *Journal of Sociology*, 31 (3), 23–36.
- Haugaard, M., ed., 2002. *Power. A reader*. Manchester, NH: Manchester University Press.
- Hayward, M.L.A. and Boeker, W., 1998. Power and conflicts of interest in professional firms: evidence from investment banking. *Administrative Science Quarterly*, 43 (1), 1–22.
- Held, D. and Thompson, J.B., eds., 1989. *Social theory of modern societies: Anthony Giddens and his critics*. Cambridge: Cambridge University Press.
- Heracleous, L., 2006. A tale of three discourses: the dominant, the strategic and the marginalized. *Journal of Management Studies*, 43 (5), 1056–1087.
- Heracleous, L. and Barrett, M., 2001. Organizational change as discourse: communicative actions and deep structures in the context of information technology implementation. *Academy of Management Journal*, 44 (4), 755–778.
- Hodgson, G.M., 2007. Institutions and individuals: interaction and evolution. *Organization Studies*, 28 (1), 95–116.

- Hoffman, A.J. and Ocasio, W., 2001. Not all events are attended equally: toward a middlerange theory of industry attention to external events. *Organization Science*, 12 (4), 414–434.
- Howard-Grenville, J.A., 2005. The persistence of flexible organizational routines: the role of agency and organizational context. *Organization Science*, 16 (6), 618–636.
- Jarzabkowski, P. and Wilson, D.C., 2002. Top teams and strategy in a UK university. *Journal of Management Studies*, 39 (3), 355–381.
- Jones, M.R. and Karsten, H., 2008. Giddens' Structuration Theory and information systems research. *MIS Quarterly*, 32 (1), 127–157.
- Langley, A., 2009. Studying processes in and around organizations. In: D.A. Buchanan and A. Bryman, eds. *The Sage handbook of organizational research methods*. London: Sage, 409–429.
- Latour, B., 1987. *Science in action: how to follow scientists and engineers through society*. Milton Keynes: Open University Press.
- Lawrence, T.B. and Phillips, N., 2004. From Moby Dick to Free Willy: macro-cultural discourse and institutional entrepreneurship in emerging institutional fields. *Organization*, 11 (5), 689–711.
- Levina, N. and Vaast, E., 2005. The emergence of boundary spanning competence in practice. Implications for implementation and use of information systems. *MIS Quarterly*, 29 (2), 335–363.
- Levinthal, D. and Rerup, C., 2006. Crossing an apparent chasm: bridging mindful and lessmindful perspectives on organizational learning. *Organization Science*, 17 (4), 502–513.
- Lillrank, P., 2003. The quality of standard, routine and nonroutine processes. *Organization Studies*, 24 (2), 215–233.
- Limayem, M., Banerjee, P., and Ma, L., 2006. Impact of GDSS: opening the black box. *Decision Support Systems*, 42 (2), 945–957.
- Locke, K., 1996. Rewriting the discovery of grounded theory: after 25 years? *Journal of Management Inquiry*, 5 (3), 239–245.
- Lukes, S., 1974. *Power: a radical view*. London: Macmillan.
- Luo, Y.D., 2006. Political behavior, social responsibility, and perceived corruption: a struction perspective. *Journal of International Business Studies*, 37 (6), 747–766.

- Macintosh, N.B. and Scapens, R.W., 1990. Structuration theory in management accounting. *Accounting, Organizations and Society*, 15 (5), 455–478.
- Maznevski, M.L. and Chudoba, K.M., 2000. Bridging space over time: global virtual team dynamics and effectiveness. *Organization Science*, 11 (5), 473–492. 60
- Meyerson, D.E., 1994. Interpretations of stress in institutions: the cultural production of ambiguity and burnout. *Administrative Science Quarterly*, 39 (4), 628–653.
- Miner, A.S., 1991. Organizational evolution and the social ecology of jobs. *American Sociological Review*, 56 (6), 772–785.
- Mouzelis, N., 2000. The subjectivist-objectivist divide: against transcendence. *Sociology*, 34 (4), 741–762.
- Nelson, R.R. and Winter, S.G., 1982. *An evolutionary theory of economic change*. Cambridge, MA: Harvard University Press.
- Orlikowski, W.J., 2000. Using technology and constituting structures: a practice lens for studying technology in organizations. *Organization Science*, 11 (4), 404–428.
- Orlikowski, W.J. and Yates, J., 1994. Genre repertoire. The structuring of communicative practices in organizations. *Administrative Science Quarterly*, 39 (4), 541–574.
- Orlikowski, W.J. and Yates, J., 2002. It's about time: temporal structuring in organizations. *Organization Science*, 13 (6), 684–700.
- Pentland, B.T. and Rueter, H.H., 1994. Organizational routines as grammars of action. *Administrative Science Quarterly*, 39 (3), 484–510.
- Perlow, L.A., 1999. The time famine: toward a sociology of work time. *Administrative Science Quarterly*, 44 (1), 57–81.
- Poole, M.S. and DeSanctis, G., 2004. Structuration theory in information systems research: 20 methods and controversies. In: Michael E. Whitman and Amy B. Woznynski, eds. *The handbook for information systems research*. Hershey, PA: Idea Group, 206–249.
- Poole, M.S. and Van de Ven, A.H., 1989. Using paradox to build management and organization theories. *Academy of Management Review*, 14 (4), 562–578.
- Pozzebon, M., 2004. The influence of a structurationist view on strategic management research. *Journal of Management Studies*, 41 (2), 247–272.

- Pozzebon, M. and Pinsonneault, A., 2005. Challenges in conducting empirical work using Structuration Theory: learning from IT research. *Organization Studies*, 26 (9), 1353–1376.
- Ritzer, G., 2000. *Modern sociological theory*. 5th ed. Boston, MA: McGraw-Hill.
- Sallaz, J.J. and Zavisca, J., 2007. Bourdieu in American Sociology, 1980–2004. *Annual Review of Sociology*, 33, 21–41.
- Sandfort, J.R., 2003. Exploring the structuration of technology within human service organizations. *Administration & Society*, 34 (6), 605–631.
- Sewell, W.H., 1992. A theory of structure: duality, agency, and transformation. *American Journal of Sociology*, 98 (1), 1–29.
- Sminia, H., 2009. Process research in strategy formation: theory, methodology and relevance. *International Journal of Management Reviews*, 11 (1), 97–125.
- Stinchcombe, A.L., 1982. Should sociologists forget their mothers and fathers. *American Sociologist*, 17 (1), 2–11.
- Stones, R., 2005. *Structuration theory*. Basingstoke: Palgrave Macmillan.
- Stryker, S., 1980. *Symbolic interactionism: a social structural version*. Menlo Park, CA: Benjamin/Cummings.
- Sydow, J., 2004. Network development by means of network evaluation? Explorative insights from a case in the financial services industry. *Human Relations*, 57 (2), 201–220.
- Sztompka, P., 1991. *Society in action: the theory of social becoming*. Cambridge: Polity Press.
- Thompson, M.P.A. and Walsham, G., 2004. Placing knowledge management in context. *Journal of Management Studies*, 41 (5), 725–747.
- Thrift, N., 1985. Bear and mouse or bear and tree? Anthony Giddens's reconstitution of social theory. *Sociology*, 19 (4), 609–623.
- Turner, J.H., 1986. Review essay: the theory of structuration. *American Journal of Sociology*, 91 (4), 969–977.
- Urry, J., 1991. Time and space in Giddens' social theory. In: Christopher G.A. Bryant and D. Jary, eds. *Giddens' theory of structuration. A critical appreciation*. London: Routledge, 160–175.

- Van de Ven, A.H. and Poole, M.S., 1995. Explaining development and change in organizations. *Academy of Management Review*, 20 (3), 510–540.
- van Dolen, W.M., Dabholkar, P.A., and de Ruyter, K., 2007. Satisfaction with online commercial group chat: the influence of perceived technology attributes, chat group characteristics, and advisor communication style. *Journal of Retailing*, 83 (3), 339–358.
- Walsham, G., 2002. Cross-cultural software production and use: a structural analysis. *MIS Quarterly*, 26 (4), 359–380.
- Weick, K.E., 1979. *The social psychology of organizing*. New York, NY: McGraw-Hill.
- Weick, K.E., 1995. *Sensemaking in organizations*. London: Sage.
- Weick, K.E., 2001. *Making sense of the organization*. Boston, MA: Blackwell.
- Whittington, R., 1992. Putting Giddens into action: social systems and managerial agency. *Journal of Management Studies*, 29 (6), 693–712.
- Whittington, R., 2010. Giddens, Structuration Theory and Strategy-as-Practice. In: Damon Golsorkhi, Linda Rouleau, David Seidl, and Eero Vaara, eds. *Cambridge handbook of Strategy-as-Practice*. Cambridge: Cambridge University Press, 109–126.
- Willmott, R., 2000. The place of culture in organization theory: introducing the morphogenetic approach. *Organization*, 7 (1), 95–128.
- Windeler, A. and Sydow, J., 2001. Project networks and changing industry practices. Collaborative content production in the German television industry. *Organization Studies*, 22 (6), 1035–1060.
- Yates, J. and Orlikowski, W.J., 1992. Genres of organizational communication: a structural approach to studying communication and media. *Academy of Management Review*, 17 (2), 299–326.

APPENDIX 1 LITERATURE SEARCH PROCEDURE

PHASE 1: Web of Science – Social Science Citation Index Database Searcha

Phase 1a: include results obtained by search on core concepts in 'topic'

- 'Structuration theory' OR 'Theory of structuration' 280

Phase 1b: exclude articles based on article type

- Book review 30
- Review 17
- Editorial material, Notes, Letters 5

Phase 1c: exclude articles based on practical and content criteria

- Non-English references 13
- Subject areab 150

Number of references retained from PHASE 1 65

PHASE 2: Web of Science – Cited Reference Searchc

Phase 2a: include results obtained by search based on cited referencesd

- Author = 'Giddens A' AND Publication year = '1984' 2774
- Author = 'Giddens A' AND Publication year = '1979' 1506
- Combined cited reference results 1827

Phase 2b: exclude articles based on source title

- Source titlee 1470

Number of references retained from PHASE 2 357

PHASE 3: Combining results from Phases 1 and 2

Phase 3a: remove duplicates	407
Phase 3b: exclude articles that are	
• Theoretical	152
• Unavailable	2
Number of references retained for review	253

^aBased on reference search in the WoS/SSCI database on 14 May 2008.

^bOnly articles with the following subject areas were included for the review: Management, Business, Business Finance, Operations Research and Management Science and Public Administration.

^cBased on a cited reference search in the WoS/SSCI database on 14 May 2008.

^dSpelling errors in references are also included in results.

^eFor our review we selected articles from: Organization Studies, Journal of Management Studies, Organization Science, Academy of Management Review, American Sociological Review, Organization, Administrative Science Quarterly, MIS Quarterly, Academy of Management Journal, American Journal of Sociology, and British Journal of Management.