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Title	Introduction: a cartography of contemporary cognitive social theory
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Publication date	2007-08-01
Original Citation	Strydom, P. (2007) 'Introduction: a cartography of contemporary cognitive social theory', European Journal of Social Theory, 10(3), pp. 339-356. doi: 10.1177/1368431007080699
Type of publication	Article (peer-reviewed)
Link to publisher's version	https://journals.sagepub.com/doi/abs/10.1177/1368431007080699 - 10.1177/1368431007080699
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Download date	2026-11-03 15:33:58
Item downloaded from	https://hdl.handle.net/10468/7711



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Published in *European Journal of Social Theory* 10(3), 2007, pp. 339-356 (Special issue on 'Social Theory after the Cognitive Revolution: Types of Contemporary Cognitive Sociology', Guest editor: Piet Strydom).

Introduction

A Cartography of Contemporary Cognitive Social Theory[1]

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The context of social theory has undergone a significant change in the late twentieth century. While conditioned by a wide variety of factors, a major intellectual impetus behind this change was the so-called 'cognitive revolution' of the late 1950s and the subsequent rise and development of the cognitive sciences (e.g. Gardner 1989; Varela et al. 1991; Bechtel and Graham 1998; Strydom 2006a). What gave this event added social theoretical relevance is that it effectively led to a reopening of the question of the constitution of social reality and the manner in which it should be studied. The resulting debate problematised such processes as information processing, knowledge production and utilization, communication and world creation and their modes of structuration as well as existing epistemological and methodological approaches. For three or four decades now, this re-contextualization has been presenting social theory with a range of new problems, challenges and possibilities. This continues to be the case. The controversy about the philosophical and social scientific significance of naturalism revitalised by the cognitive sciences, brain research in particular, is attracting increasing

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attention. In this context, Stephen Turner for example provocatively submits that, today, 'cognitive science'…[constitutes]…'the central challenge for social theory' (2002: 1).

One way in which this challenge is making itself felt is through the demand for a thorough revision of some core social scientific concepts and approaches, including their underlying assumptions. It is the case, of course, that since cognitive science is programmatic, contested and evolving, this demand is by no means straightforward and clear-cut. Despite this, and although not yet sufficiently attending to the contemporary interdisciplinary debate about cognition, social scientists have begun rising to the challenge. Indeed, it would not be an exaggeration to say that a cognitive movement has emerged in social theory and, consequently, that the field has been enjoying a remarkable growth during the past decade or two. But given the complex circumstances, it is not surprising that reactions to and interpretations of the challenge vary rather widely and in certain respects also reproduce old differences in a new form. Some defensively reject cognitive science as irrelevant or, considering its naturalistic thrust, as a dangerous threat. Others have become more reflective and analytical in dealing with conceptual and theoretical questions, but have not necessarily yet come to grips with the complexities and nuances of the problem. Still others, quite willing to face epistemological difficulties, insist on pursuing such serious questions as to whether cognitive science refracts the social scientific problematic, implies a refinement or renovation of methodology, and advances the analysis of social reality. Even in the latter case, responses differ sharply. Some stress a scientistic naturalism, others an idealistic culturalism or rationalistic individualism, and still others an appropriate way to relate the sociocultural world to

natural processes. The variety of directions in which answers to the pressing questions are being sought, rather than simply the different reactions, is the source of an opaque situation which points to the urgent need for making sense of contemporary cognitive social theory.

The purpose of this special issue of EJST, accordingly, is to bring together a selection of contributions by leading authors representing distinct European and American traditions which, when placed side-by-side, would give the reader a sense of the cognitive movement in social theory as well as an authoritative and unique overview of different yet complementary directions at the outset of the twenty-first century. In order to present these contributions in an intelligible way, however, it would be necessary to identify criteria and develop a framework according to which the different positions could be related to one another. Since no such construct is as yet available, this introduction will be devoted to a first attempt at a systematic mapping of the field of contemporary cognitive social theory. To begin with, a few clarifying historical remarks are made about the relation of social theory to cognitive science, then some relevant criteria for the classification of different types of cognitive social theory are reviewed and, finally, a tentative framework is proposed. Since it is not my task as editor to review each of the unique contributions in detail but rather to maintain a meta-perspective, I shall make references to the eight essays in the course of the discussion with a view to locating them in such a way within the framework that it is possible to obtain an overview of the contemporary cognitive social theoretical field.

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Cognitive Science and Social Theory

Whereas the cognitive revolution's impact on the social sciences was more indirect than on disciplines like psychology and linguistics, anthropology was nevertheless earlier and more directly affected than sociology. Given the paradigm shift from behaviour to cognition, this can be accounted for by the fact that anthropology to a degree shared a behaviouristic orientation with psychology and linguistics. By contrast, sociology has a long tradition of studying ideas, beliefs, convictions, motivations, categories and knowledge. This concern allowed it not only to anticipate – albeit somewhat obliquely – the cognitive revolution in certain respects, as for instance did Weber, Simmel, Durkheim, Mannheim, Mead, Schutz and Adorno, but also to latch to a certain extent quite seamlessly – albeit not very explicitly – onto it. This latter relation is encapsulated by the so-called 'cognitive turn [in] sociology' (Knorr-Cetina and Cicourel 1981: 2; Fuller 1984) which occurred during the late 1960s and 70s borne by theorists like Berger and Luckmann (1967), Garfinkel (1967), Habermas (1971, 1972), Luhmann (1973), Cicourel (1973), Nowotny (1973), Goffman (1974), Bourdieu (1977) and Knorr (1977) – all of whom were able to open new cognitive perspectives while drawing on such long-standing traditions as Durkheimianism, hermeneutics, phenomenology, pragmatism, symbolic interactionism, critical theory, the sociology of knowledge and so forth.

This initial wave of social theoretical responses to the cognitive revolution proceeded under the auspices of a serial symbolic processing model (e.g. Newell 1980) which, although basically inspired by the leading technological innovation of the time, the computer, allowed competing and even contrary interpretations of information

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processing, knowledge and communication. The contradictory cognitive science directions impacting on the social sciences – particularly cognitive psychology,[2] artificial intelligence[3] and linguistics[4] – left their mark on cognitive social theory. Evidence for this is to be found in both contrary positions taken by different theorists and in tensions within the writings of individual theorists.[5]

The second set of social theoretical responses to cognitive science took shape in the context of a deepening and broadening from approximately 1980 onwards of the original quite narrow cognitivism based on the computer model. From linear symbolic processing and syntactically structured representation, a first vertical shift took place in the direction of the brain neuroscientifically conceived as an operationally closed, multilayered, neural network in which different components performing complementary sub-tasks bring about changes through experience. The potential that the brain model opened for social theory, particularly by way of so-called 'parallel distributed processing' or 'connectionism' (Rumelhart et al. 1986), was multiplied by the second horizontal shift. It entailed the expansion of the original model to include the environment. Now it was no longer simply a matter of networks, the generation of emergent properties and their self-organization (e.g. Krohn, Küppers and Nowotny 1990) – i.e., something about which social theory could learn from cognitive science – but also of embodiment, situatedness, historicity, engagement, activity and dynamism (e.g. Varela et al. 1991) – something about which social theory in turn could teach cognitive science. While the addition of the brain and environment models threw cognitive science into an identity crisis (Bechtel and Graham 1998: 77), the insecurity of this pluralism has in turn introduced a productive tension into

social theory. With the different models stimulating the development and consolidation of divergent directions, an invigorating impulse fed directly into a remarkable efflorescence of cognitive social theory during the 1980s and 90s. This was reinforced by the impact of contextual factors among which are, for example, the invasion of more and more domains by culture; the establishment of neo-liberal economics and politics and the resulting globalisation; the ascendancy of the life sciences; the spectre of risk and the increasing importance of ecology; the flaring up of debates about environmental problems and new technologies; and more recently the confrontation between science and religion and between different religions.

Despite the fact that critics appeared all along the way,[6] their varied objections did not succeed in impeding the cognitive movement. The reasons for this are manifold, but two stand out in particular. First, the cognitive turn's exposure of the major sociological traditions as having in one way or other confounded different dimensions of social reality demands that new distinctions be made and new relations be established. To dissipate confusion, we need to determine anew the relations among, for instance, the collective, the practical and the cognitive (Thévenot 1998); among collective representations, beliefs, judgements and acceptance (Miller 1986, 1992; Engel 1997; Bouvier in this issue); and, more basically, between the cognitive and the symbolic. If we do this, a whole series of more precise questions arises: What is the relation between society and nature or, more specifically, between the sociocultural world and the brain (Habermas 2005: 155-86; Bergesen 2004)? What is the relation between collective phenomena and the individual whose mind is the product of a unique and distinctive learning history

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(Turner 2002)? How do actors relate to culture, or how does culture enter into action (DiMaggio 1997; Cerulo 2002; Lamont and Thévenot 2000)? Are symbols the sole infrastructure of meaning? What role do they play if experience is not simply symbolically structured but also organized by active schemata? What is the relation between symbolic analysis and cognitive analysis (D'Andrade 1995; Eder 1993, 1996, in this issue; Conein 2005; Brekhus in this issue)? And so forth.

The second reason for the strengthening of the cognitive approach during the past decade or so concerns a more contextual force – viz. the increasingly visible vulnerability of modern societies and, hence, the mounting uncertainty about macro-processes and their outcomes in the wake of rapid and pervasive societal transformation. Not only the array of risks produced by a civilisation of self-injury and potential self-destruction (Beck 1999) became apparent, but also the urgent need globally and in an enlarging Europe for a 'politics of mentalities' (Lepenies 1997: 37; see also Delanty and Rumford 2005) and a new mode of coordination articulated in the medium of intercultural communication. Such vulnerability, uncertainty and lack of coordination compelled social scientists to take a more penetrating look at processes and structures and to de- and reconstruct macro-phenomena. This required more focused attention being given to modes of perception, modes of schematisation or framing, processes of the construction of cognitive structures of different levels and scope, and the discursive processing of cultural models of reality.

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Given the impetus social theory received from the cognitive revolution and interaction with the cognitive sciences, the cognitive social theoretical field is today quite extensive, embracing a wide range of competing yet complementary directions. It is for the purpose of gaining a better understanding of this field that it is now necessary to collect some criteria and to take the first steps toward developing a tentative classification of types of contemporary cognitive social theory.

Mapping the Cognitive Social Theoretical Field

Due to the ongoing development of cognitive social theory since the 1980s, attempts to map the field are few and far between and, perhaps, even premature to this day.[7] Criteria for distinguishing different types are certainly emerging from the debates, even if only hesitantly so, but no systematic classification is ready to hand as yet. Whatever proposals are available, including the interesting ones of Borzeix et al., DiMaggio and Cerulo, are more or less limited because of their use of content oriented criteria and/or neglect to extrapolate the epistemological-methodological dimension. The epistemologically oriented Sorbonne conference held in 1995 (Boudon et al. 1997) delivered valuable ideas to which I shall return below, but having been intentionally confined to questions regarding the role of rational choice theory, methodological individualism and naturalism in the study of collective beliefs and action, it was not concerned with providing an overview of the larger field. To get a sense of the task before us, it will be helpful first to consider briefly the available proposals. Whatever their limitations, they provide stepping stones toward a more comprehensive and thoroughgoing way of mapping the field.

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Proposals for Mapping the Field

Borzeix et al.

With its conference in the autumn of 1995 and the resulting anthology (Borzeix et al. 1998), the *Société française de sociologie* envisaged bringing to attention the different cognitive currents represented in the Francophone sociological community. While various criteria for a possible classification of cognitive social theory are contained in the contributions, Borzeix et al. opted for a content-oriented, thematic approach without pretending to be comprehensive or legislative. This organizing instrument embraces four fundamental themes: the theory of ideology and of error, the sociology of categories and cognitive semantics, cognition and action, and finally argumentation and the diffusion of representations. While being a meaningful step towards a systematisation of the field, deeper meta-theoretical dimensions are not elevated to the more general level.

DiMaggio

DiMaggio (2002: 275-81) classifies different types within the 'space of cognitive sociology' which he establishes by means of two axes. The first object-oriented continuum stretches from works on how we think ('focus on styles and mechanisms of cognition') to those concerned with the substance of thought ('focus on content of cognition'). The second methodologically oriented axis pertains to the strategy followed in articulating cognitive sociology and has works conceiving it as 'autochthonous' at its one extreme, which contrasts with works regarding cognitive sociology as 'building on cognitive psychology,' at the other. This allows DiMaggio to order a small number of

contributions, with the exception of Durkheim all American, in a meaningful way. This typology is constructed from the point of view of his own preference for a cultural sociology informed by cognitive psychology, which he justifies with the argument that interpretative approaches must be brought into relation with research on cognitive structures and processes (DiMaggio 1997). Although DiMaggio's typology is not conceived as an attempt at a general classification, this epistemological-methodological gesture is an important one. The crucial issue, however, is the particular use we should make of cognitive psychology or, more generally, of cognitive science. The question is whether and, if so, to what extent DiMaggio's typology could accommodate authors such as Turner (2002; in this issue), Sperber (1996, 1997), Luhmann (1995) or Conein (1990, 2005).

Cerulo

In line with DiMaggio's advocacy, Cerulo (2002: 283-93; 2005) takes cognitive psychology as her guideline while drawing cues from the shift to the brain model. Important to her is the categorisation of the process of cognition which she understands as thought unfolding through a series of natural operational stages. Despite stressing the need to avoid cognitive science's tendency to celebrate psychological invariants in favour of focusing on cognition in its socio-cultural context, Cerulo thus nevertheless adopts a fourfold stage model as the appropriate device for classifying the cognitive sociological field.[8] These stages are sensation and attention, discrimination and classification, representation and integration, and finally storage and retrieval. There is no doubt that it assists her in offering an orderly and informative overview of quite a vast range of

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American and European contributions to cognitive social theory. Yet her framework is characterised by some conspicuous absences. That neither the interactionist tradition deriving from Cicourel (e.g. Saferstein in this issue) nor the naturalistic tradition (e.g. Turner in this issue) is accommodated – to mention only two American currents – points up its limitations. Decisive here is that Cerulo approaches classification ultimately from the point of view of culture. This leads her to ignore not only broader meta-theoretical dimensions, but also the fact that the structural division and operations of the brain could be regarded very differently. For instance, a modular view of the brain could be taken as the basis for a mechanistic approach to culture (e.g. Sperber 1996) instead. This suggests that a more comprehensive framework is possible.

To advance beyond the above proposals one needs to take into account philosophically informed meta-theoretical dimensions which allow for distinctions at issue in the contemporary international debate. By observing the ontological, epistemological and methodological assumptions made by cognitive social theorists, it is possible to incorporate a much wider range of types and thus to achieve a more comprehensive mapping of the field. To develop an initial systematisation, I propose to construct a framework using criteria drawn from the contemporary debate about cognition which are tested against the philosophy of the social sciences.

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Criteria for Mapping the Field

Strong and weak cognitivism

The first and most basic criterion I want to extrapolate is the distinction Sperber drew between *cognitivisme fort* and *cognitivisme faible* (1997: 125), strong and weak cognitivism. There is a sense in which this proposal coincides with Zerubavel's (1997: 2-3) distinction between 'cognitive universalism', the cognitive sciences' concern with the universal foundations of cognition, and 'cognitive individualism', referring to a personalised view of the mind and hence individual idiosyncrasies. Strong cognitivism is represented by approaches which presuppose the priority of properties isolated by the cognitive sciences in the strict sense. They would include neurophysiological processes, neural or modular structures, neural events and thus cognitive mechanisms in the brain, but equally also informational or cognitive processes dealt with by cybernetics, artificial intelligence, biology and ethology as well as emergent cognitive structures such processes give rise to. Weak cognitivism, by contrast, applies to approaches that draw on the traditional stock of ideas of the social sciences rather than the natural sciences. Instead of the brain or brain-like structures and neural or informational processes, therefore, such approaches are concerned with beliefs, intentions, motives, meanings, reasons, rationality, mental representations, their formation and organization, their role in conduct and their function.

The strong/weak distinction is a meaningful criterion for staking out the field and classifying cognitive social theory.

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On the one extreme, Sperber's (1997) own option is for the strong version which, in his case, goes back to Chomsky and Fodor and is thus closer to orthodox cognitivism. Although taking cues from connectionism as understood by Churchland rather than orthodox cognitivism, also Turner's (2002, in this issue) proposal to conceive of social theory as cognitive neuroscience clearly falls in this category. While trying to avoid reductionism, he comes close to taking an eliminativist position which dismisses all versions of social theory based on traditional social scientific concepts such as a shared culture and practices. Luhmann's (1990, 1992, 1995; see Leydesdorff in this issue, Eder in this issue, and Strydom 2006a) cognitive approach to system theory, which since the 1980s has been inspired by cognitive biology and brain research, likewise belongs here. In these strong versions, the social dimension of cognition borne by physical or mechanical processes is the focus of attention.

On the other extreme, the approaches of the French and German rational choice sociologists, Boudon (1995, 1997; see Bouvier in this issue) and Esser (1990, 1996; see Eder in this issue) respectively, are both examples of weak cognitivism. For both, concepts like intentions, meanings, reasons and rationality are central. Pharo (1998, in this issue), who characterises his central concern as moral sociology and his Weberian position as falling between phenomenology and cognitive science, also fits in here. While acknowledging the constraints of external reality and a certain degree of social construction of reality, he focuses specifically on subjective intentionality, reason and meaning in the form of cognitive structure and moral orientation as the intrinsic quality of

social action and social reality. By contrast with the cognitive objectivism of the strong cognitivists, then, Boudon, Esser and Pharo all represent some version or other of cognitive subjectivism.

Supporting epistemological, ontological and methodological assumptions

The distinction between two basic forms of cognitivism leads us back to the long historical sequence of disputes about the epistemological, ontological and methodological assumptions underpinning the social sciences (see e.g. Delanty and Strydom 2003) and the level of clarity attained in them regarding the relation between objectivism and subjectivism, naturalism and humanism, and explanation and understanding or observation and interpretation. Against this background, it becomes apparent that the emergence of cognitive science provided resources for the renewal of the claim of objectivist, naturalist and explanatory versus subjectivist, humanistic and interpretative approaches. In line with past disputes, so also in the contemporary debate, strong explanatory cognitivism is aligned with naturalism, while weaker forms of cognitive social science rather assume a humanistic ontology, thus leaning more or less towards the idealistic or rationalistic pole.

Both Sperber (1985, 1996) and Turner (2002, in this issue) are emphatic about embracing a naturalist ontology inspired by neurophysiology. For a considerable period, they have been countering interpretative approaches by searching for explanatory principles in cognitive processes taking place in the brain. Whereas Turner locates these principles in

the workings of neurons, Sperber – starting from Fodor's (1983) modular theory – finds them at the somewhat more general level of modules such as perception, attention, memory, language and so forth. Starting from Goffman's naturalistic interactionism, but interpreting it more strongly under the impact of Dennett's (1987) proposed cognitive ethology, Conein (1990, 2005) assimilates interpretation to an observational approach which allows a better understanding of human cognition and social relations by locating them against the comparative foil of the social dimension of primate cognition. In his hands, therefore, cognitive sociology is based on an ethological or, more specifically, a primatological model and is ascribed the task of explaining the generative mechanisms of group life.

On the other hand, the Weberian sociologist Boudon (1995, 1997, 1998; see also Bouvier in this issue), representing a methodological individualist or solipsistic, rational choice cognitivism, is as adamant in rejecting naturalistic causal explanation – whether in terms of imitation, interiorisation, contagion, frames or some mechanical effect of social forces. Instead, he favours the reconstruction of the ideal-typical individual's beliefs or actions in terms of plausible reasons. From his humanist perspective, cognitivism does not refer to natural mechanisms in the brain, but rather to the subjective rationality of conscious and intentional humans. Pharo (1998, in this issue), for his part, acknowledges that cognitive science compels the recognition of realism beyond pure constructivism and relativism. Yet he argues from a Weberian actionist and phenomenological perspective specifically against naturalism as represented by cognitive psychology and sociobiology, but also against Marxist historicism and Durkheimian sociologism.

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Methodological individualism and infra-individualism

Methodologically, yet another set of assumptions underpins the two forms of cognitivism. While the representatives of weak versions of cognitive social theory typically proceed from methodological individualist assumptions,[9] a new concept was introduced in the 1990s which has begun to enliven the debate – viz. methodological 'infra-individualism' (Sperber 1997; Bouvier 2002, in this issue). Sperber, who employs the phrase to characterise his own position, correlates infra-individualism with strong cognitivism and plays it off against weak cognitivism based on methodological individualism.

Methodological individualism itself comes in two versions. The first weak version regards the individual as the basic unit of social structure in opposition to holism which prioritises institutional contexts or group concepts instead. The strong version treats the individual as a conscious subject and focuses on human actions and reasons in opposition not merely to holism but especially also to infra-individualism. An exemplary instance of this second type is Boudon's (1995, 1997, 1998) cognitive rationalism. Infra-individualism, by contrast, refers to productive processes in the organism below the level of the individual and therefore strips the actor or agent of all significance for the explication of social phenomena. If one accepts that there are several sub-levels of infra-individualism, stretching from modules through neurons to genes, not to mention still more primitive levels, then it would seem as though Turner's position (in this issue) could also be classified as infra-individualist.

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Bouvier (in this issue) borrows methodological individualism from Boudon but extends it far beyond him so as to include an interactive or argumentative moment. He does not deny the relative right of supra- and infra-individual factors, not even of an 'objective infra-individualism' of natural or mechanical factors such as Sperber's, yet insists that in a methodological individualist framework they must be traced back to the subjective dimension.

Social cognition and distributed cognition

An important distinction of relatively recent origin that is impacting on cognitive social theory by hardening into two distinct currents is one between social cognition and distributed cognition. Both focus on cognition in the sense of knowing and related processes dealing with information such as perception, attention, categorising, reasoning and planning, but they represent two distinct perspectives.

Social cognition stems from classical psychology and has flourished since the cognitive revolution in various disciplines, especially psychology and ethology, within the framework of orthodox cognitivism (e.g. Howard 1994; Conein 2005). As such, it can be aligned with the strong, infra-individualist, explanatory cognitivist approach. Here cognition is regarded as a primary or basic, largely automatic process involving little or no reflection. Sociologically, Goffman's (e.g. 1967) naturalistic approach to the elementary forms or generative mechanisms of sociation such as face-to-face interaction, mutual attention and joint action is in line with it. It is this tradition that Conein (1990,

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2005) keeps alive in sociology today by grafting contemporary ideas deriving from cognitive psychology and cognitive primatology onto it. In anthropology, the same holds for Sperber's (1996) modular epidemiological theory of the diffusion of cultural representations.

Distributed cognition, on the other hand, was made possible by the shift from the computer model to the brain and environment, and is associated with connectionism which itself is subject to divergent interpretations. Besides Turner's (2002, in this issue) proposal of a more orthodox, strong interpretation based on the paradigm of the brain according to which connectionism represents a habit model which best explains the tacit parts of culture, there is a further interpretation. It is inspired by a heterodox view of cognition which acknowledges the importance of taking account of the situatedness, activity and dynamics deriving from a relation to the environment (e.g. Clark 1998; Wertsch 1998). In its more developed versions, cognition is here taken as a complex secondary process in which reflection plays a significant role in mobilizing reasoning, diagnosis, planning, problem solving, cooperation and joint world creation. Rather than treating cognition simply as an aptitude, it is considered as a process in which collective knowledge is jointly produced and acquired in the plural in a particular context (e.g. Hutchins 1995).

Such interpretation, however, takes us beyond the two extremes – beyond both strong and weak cognitivism, both objective and subjective cognitivism, both explanation and understanding and beyond both methodological individualist and infra-individualist

positions – towards an intermediate domain of positions which are able to mediate in some sense or other, or on a graded scale, between these polarised options.

Intermediate positions

In an intermediate position, but closer to the strong pole of the spectrum, are the German and Dutch authors Hejl and Leydesdorff. Hejl's (1987, 1992, 1992a, 1993) conception of 'syn-referential' social systems represents a less extreme form of cognitive social theory than Turner and Luhmann's, yet it exhibits certain similarities with both. By contrast with Luhmann's self-organizing, self-referential or autopoietic view, he regards social systems as including the agents who construct them and, in distinction to Turner, he stresses the central role of socially generated states or shared reality constructs in the living systems constituting social systems. Leydesdorff's (in this issue) cognitive social system theory represents a still weaker version. While appreciating Luhmann's contribution, he for his part decisively distances his own concern with social systems from Luhmann's metabiological approach. Also in an intermediate position, but this time closer to the weak extreme of the continuum, is Bouvier (1995, 1997, 1998, 2002, in this issue). He explicitly argues that his 'argumentativist' version of cognitive sociology is not quite as weak as Sperber's distinction would lead one to believe. It is indeed built on a methodological individualist basis, but is extended by an interactionist component which includes an economically conceived rhetorical model. Bouvier acknowledges the relative right of supra- and infra-individual factors, but grants that they transcend the limits even of his extended version of methodological individualism.

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The question is what allows cognitive social scientists and theorists to override the distinction between strong and weak cognitivism and hence the effectively reproduced traditional methodological dualism. What allows for the possibility of intermediate positions? Here the notion of a relation of complementarity which raises the possibility of mediation between the two starkly opposed extremes is relevant. Recently, Engel (1997, 1998) argued emphatically for complementarity in so far as, for instance, actionist rationalism is not necessarily incompatible with naturalism. Boudon et al. (1997: 8), in turn, interpret complementarity as suggesting an attempt to overcome a dualistic position as well as naturalistic reductionism, and see in it an intimation of what they call a '*troisième voie*'. But one could ask whether a third way would not entail overcoming also actionist, individualist or rationalist one-sidedness. Surely, an idealistic 'monism from below' is as undesirable as a scientistic 'monism from above' (Habermas 2005: 170). Such considerations suggest the answer lies in cognitively relevant or interpreted *axiomata media* or specific rules of composition establishing determinate relations between the different dimensions involved.

Substantively, in these terms, historically specific sets of societal, institutional, cultural and communicative conditions are assigned a significant role they do not enjoy in the strong and weak versions. For example, Cicourel (1973, 1990) and Saferstein (1998, in this issue) emphasise structures of interactive cooperation in specific institutional contexts. Social movement theorists like Snow et al. (1986, 1988), Eyerman and Jamison (1991) and Chazel (1997) analyse cognitive structures such as 'frames' or 'cosmologies'

generated by and guiding the interaction, cognitive praxis and collective action of movements. Starting from Habermas (1979, 1984/87, 1996), Miller (1986, 1992, 2002) and Eder (1993, 1996; in this issue) focus on structures of coordination generated in public discourses dealing with problems deriving from economic, political, social and cultural forces.[10] Boltanski and Thévenot (1991; Thévenot 1998, 2001, in this issue) give attention to structures of coordination, modes of engagement with reality and corresponding cognitive formats in different contexts. For DiMaggio and Powell (1991; DiMaggio 1997) institutions which depend on the micro-level articulation of cognition and culture are central, while Zerubavel (1997), Cerulo (2002, 2005) and Brekhus (1998, in this issue) stress cultural structures as filters between mind and reality. The latter group of authors are emphatic that their approach occupies a 'middle level' (Zerubavel 1997: 5-6) which focuses on 'cognitive pluralism' (Brekhus, in this issue) between 'cognitive universalism' and 'cognitive individualism'.[11] This gesture contains an important methodological indication.

Weber's complex methodological view of sociology faintly yet discernibly already suggested that mediation between complementary positions is possible, and this was borne out by the third phase of the explanation-understanding controversy (Delanty and Strydom 2003). In contemporary cognitive social science, for instance, D'Andrade (1995) and DiMaggio (1997, 2002) advocate building cognitive assumptions deriving from cognitive psychology and social cognition explicitly into anthropological and sociological studies of culture. Very importantly, the strategic sense of this is to relativise the symbolic dimension in relation to the cognitive dimension yet without jettisoning the

former. Although himself holding to a relatively strong cognitivism, Conein (2005: 179) raises the possibility of mediation in the guise of a pluralistic approach which seeks to render naturalism and interpretativism 'compatible', while avoiding 'reductionist naturalism', 'social naturalism' or sociologism, culturalism and actionist rationalism.

Recently, Habermas made a comparable proposal. He outlined a non-scientistic 'weak' (2003: 22) or 'soft naturalism' (2005: 215) which sees continuity between nature and the sociocultural world, but does not allow the ontological priority of the former to snuff out the epistemological priority of the latter.[12] Through the solution of evolutionary problems, natural historical processes give rise to 'naturally formed structures' possessing 'cognitive import'; in turn, these structures make it possible for humans living in socio-cultural worlds to 'have experiences of and make statements about…the objective world', to 'learn', 'develop knowledge' and pursue in a 'constructivist' manner the realisation of a 'social world' which 'cannot become real without the assistance of morally acting subjects' (Habermas 2003: 10-49). Eder's (1988, 1993, 1996, in this issue) cognitive sociology ultimately also presupposes such a weak or soft naturalism.[13] He acknowledges the evolutionary process and sociality in non-human populations, but stresses the specificity of human sociality, social construction and processes of learning and social evolution thus set in motion.

Looking back from a contemporary vantage point, it is obvious that of the classical cognitive sociologists, Goffman's work most decisively occupies an intermediate position. Considering his wide-ranging impact on later developments, he must surely

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count as the most central and influential figure in cognitive sociology. One line links up with and extends Goffman's concern with 'primary frameworks', 'schemata of interpretation' or 'frames,' but gives it a cultural interpretation. Zerubavel, having studied with Goffman, for example pursues work on 'social mindscapes' (1999), while Snow and associates (1986, 1988) apply his concept of frame to social movements. Another – naturalist rather than culturalist – line of development represented by Conein (1990, 2005) takes seriously Goffman's concern with mind and activity being 'in the real world' (1986: 247). The assumption here is 'that although natural events occur without intelligent intervention, intelligent doings cannot be accomplished effectively without entrance into the natural order', which implies that 'any segment of a socially guided doing can be partly analyzed within a natural schema' (1986: 23). Thirdly, Eder's (in this issue, 1996) communicative-discursive approach not only builds on a transformation of Goffman's concept of 'interaction order', but also makes central theoretical and methodological use of his frame concept.

Types of Contemporary Social Theory

Against the background of the overall evolution of the field, the above survey has brought forward a number of criteria for the construction of a framework by means of which one could begin to map and thus systematise the diversity of positions in contemporary cognitive social theory. The first tentative attempt to do so is presented in the diagram below. The names of the eight authors representing exemplary positions in this issue are in bold and for the sake of comparison are located in relation to some of the other authors mentioned in the course of the discussion.

Published in *European Journal of Social Theory* 10(3), 2007, pp. 339-356 (Special issue on 'Social Theory after the Cognitive Revolution: Types of Contemporary Cognitive Sociology', Guest editor: Piet Strydom).

Contemporary Cognitive Social Theory: Assumptions and Positions

Metatheory		*Theory*	*Theorist*
Strong cognitivist/ Strong naturalistic		Neur(on)al	**Stephen Turner**
		Modular epidemiological	Dan Sperber
		Autopoietic system	Niklas Luhmann
		Naturalistic interactionist	Bernard Conein
|	▲	Syn-referential system	Peter Hejl
|	|	Cognitive social system	**Loet Leydesdorff**
|	|	Pragmatic communication-discourse	Habermasian cognitive sociology: Max Miller, **Klaus Eder**[14]
| axiomata	|	Neo-institutional	Paul DiMaggio
| media	|	Mindscape	Eviatar Zerubavel, Karen Cerulo, **Wayne Brekhus**
|	|	Pragmatic sociological	Luc Boltanksi & **Laurent Thévenot**
|	|	Frame alignment	David Snow et al., François Chazel
|	|	Social movement	Ron Eyerman & Andrew Jamison
|	|	Interactionist	Aaron Cicourel, **Barry Saferstein**
▼	|	Argumentativist MI/RAT	**Alban Bouvier**
Strong humanistic/ Weak cognitivist		Moral sociological	**Patrick Pharo**
		Rational choice	Raymond Boudon
		Rational choice	Hartmut Esser

While no claim to comprehensivity and full systematicity is attached to it, this classification isolates an important structural dimension of the field. By bringing together and interrelating relatively independent developments, it affords a view of the overall contours as well as of alternative pathways crisscrossing the landscape. Thereby it not simply offers a sense of the growth, range, diversity and richness already attained, but also highlights the structural problem opened up by the cognitive movement. A map of this kind is both meaningful and useful in various respects. It enables one to grasp the research agenda emerging in the field and to locate oneself in relation to a range of other

directions. It thus not only puts one in a propitious position to understand and develop one's own approach better, but also indicates how the cognitive approach is filling out a neglected but indispensable dimension of social theory as a multi-dimensional enterprise. Judging from the past decade, we can expect the impact of this theoretical turn on social theory to intensify significantly in the next number of years.

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Published in *European Journal of Social Theory* 10(3), 2007, pp. 339-356 (Special issue on 'Social Theory after the Cognitive Revolution: Types of Contemporary Cognitive Sociology', Guest editor: Piet Strydom).

Notes

[1] My thanks are due to a number of people without whose advice, support and cooperation this special issue would have been impossible: the editor of this journal, Gerard Delanty, each of the contributors, and the referees. At an early stage of this project, Dan Sperber, Laurent Thévenot, Stephen Turner and Eviatar Zerubavel offered me valuable advice and/or support. My debt to Klaus Eder goes back many years. This special issue benefited also from a research grant under the third cycle of the Irish Higher Education Authority's Programme for Research in Third Level Institutions.

[2] E.g. Piaget (1932, 1974): cognitive development; Miller et al. (1960): cognitive mechanisms of plan execution.

[3] E.g. Minsky (1975): frames; Winograd and Flores (1986): environment.

[4] E.g. Chomsky (1965): generative transformational grammar and linguistic competence; Searle (1969): intentionality and speech acts.

[5] An example of the first is the conflict between Habermas (1984/87) conceiving communication in terms of intersubjectivity and Luhmann (1995) in terms of connectivity. The second is exhibited by Goffman's (1974) failure to give a coherent account of the naturalistic and interactionist moments in his approach, or Habermas' (1979) maintenance of a tension-laden relation between a cognitive psychological and a pragmatic cognitive model for theorising the process of the constitution of society. Goffman is criticised by Conein (1990: 315) and Boudon (1995: 87, 1997: 20), and Habermas by Miller (1986), Eder (1988, 2000) and Strydom (1987, 1992, 2001, 2006b).

[6] E.g. Geertz (1973), Laudan (1977), Collins (1981), Alexander (1987), Fuller (1984, 2000) and lately Hałas (2002).

[7] The modest and tentative nature of the present proposal to map the field becomes clear, for instance, in the light of the exacting demands of the social studies of science or of science, technology and society studies (e.g. Cozzens 1997). Another option not followed here either is to approach contemporary cognitive social theory, in Bourdieu's terms, as the field of contestation it undoubtedly is. For the parameters of my own research programme, see Strydom (2000).

[8] Zerubavel adopts a similar approach in his cognitive sociological primer, *Social Mindscapes* (1997).

[9] For the older debate on methodological individualism, see O'Neill (1973).

[10] See also Strydom (2000, 2002) as well as Delanty (2001) and Delanty and Rumford (2005).

[11] It is remarkable that Zerubavel acknowledges the need for 'an integrative approach…[in the sense of]…a truly comprehensive science of the mind', yet he does not raise the possibility that the cognitive sociological field itself has to be conceived as embracing all these dimensions rather than just the middle one.

[12] For Habermas, the current debate generated by cognitive science is about 'the *correct way* in which to naturalise the mind' (2005: 156, his emphasis, my translation).

[13] In Strydom (2002) I defend and develop this position which, in my judgement, opens more relevant and thus potentially more fruitful possibilities for the attempt to analyse socio-historical processes and events than either a strong or a weak cognitivist stance.

Published in *European Journal of Social Theory* 10(3), 2007, pp. 339-356 (Special issue on 'Social Theory after the Cognitive Revolution: Types of Contemporary Cognitive Sociology', Guest editor: Piet Strydom).

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[14] My own analyses (Strydom 2000, 2002) are directly related to this line of development. See also Delanty (2001) and Delanty and Rumford (2005).

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