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Skills, toolkits, contexts and institutions: Clarifying the relationship between different approaches to cognition in cultural sociology

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Abstract

In this paper we attempt to characterize the key differences and points of convergence between two contemporary approaches to the relationship between culture and cognition in sociology which we label the toolkit and strong practice theory perspectives. We follow recent work at the intersection of culture and cognition in attempting to explicitly formulate the cognitive underpinnings of these two approaches in terms of the assumptions that they make about cultural acquisition, transmission and externalization. Our analysis suggests that in spite of very important differences in emphasis and explanatory range, toolkit and strong practice-theoretical approaches are complementary, although the specific types of modal situation for which each of them is best suited need to be more clearly specified. We develop a framework that shows how the two approaches can be deployed in conjunction as well as specifying the modal settings and situations that each will be more likely to handle best as well as those in which they will run into trouble.

Keywords: Culture; Cognition; Practice theory; Toolkit theory; Modal situation; Modal setting

1. Introduction

Our goal in this paper is to explicitly characterize two broad explanatory strategies in the sociology of culture—both of which fall under the broad umbrella of practice theory (Ortner, 1984; Bourdieu, 1990; Schatzki, 1996; Swidler, 2001)—as *cognitive* theories. We do this in order to delineate the substantive and methodological implications of this characterization. We label the two approaches with which we will be mainly concerned in what follows the ''toolkit theory''

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and ''strong practice theory'' perspectives. We believe that while sociologists are generally reluctant to engage in this kind of undertaking—even though all theories in contemporary cultural sociology make implicit (and sometimes explicit) assumptions as to the cognitive functioning of the human agent (Carley, 1989)—an explicit conceptualization of the cognitive-theoretical assumptions of these two broad research programs is a productive exercise. We follow recent work at the intersection of culture and cognition in attempting to explicitly formulate the cognitive underpinnings of these two approaches in terms of the assumptions that they make about cultural acquisition, transmission and externalization (Bloch, 1986, 1991, 1998; Toren, 1999; Ingold, 2000; Ignatow, 2007; Vaisey, 2008, 2009; Martin, 2010). This analysis is illuminating in several respects: (1) in delineating the key points of difference between the two approaches, (2) in more clearly delimiting the range of phenomena with which each perspective is concerned (and which each approach is best prepared to explain) and (3) in outlining the possible ways to integrate them into a more satisfactory account of the relationship between culture, cognition and action.

2. Toolkit theory as a cognitive theory

2.1. Toolkit theory versus the classical theory of socialization

One of the key contributions of the toolkit approach—most clearly associated with the work of Swidler (1986, 1995, 2000, 2003)—consists of its critique of the classical model of socialization inherited from Parsons' influential adaptation of the Freudian notion of ''internalization'' to provide a sociological account of the cultural constitution of the social agent (Parsons, 1964; Wentworth, 1980:32–38). In direct contradiction to the classical view, toolkit theorists point out that individuals do not seem to possess the highly coherent, overly complex and elaborately structured codes, ideologies or value systems that the classical theory of socialization leads us to expect they should possess (Turner, 1994; Swidler, 2003:29–30, 192–193; Vaisey, 2009).

Instead of regular demonstrations of the possession of coherent cultural systems on the part of ''socialized'' agents, what toolkit theory suggests (and what the empirical evidence appears to support) is that persons do not (and cognitively cannot) internalize highly structured symbolic systems in the ways that classical socialization accounts portray (e.g. Parsons, 1964:23). These cultural systems are simply too ''cognitively costly''—in anthropologist Harvey Whitehouse's (2004:28–59) sense—to be capable of being strongly ''internalized'' by anybody. People simply wouldn't be able to remember or keep straight all of the relevant (logical or socio-logical) linkages (Vaisey, 2008, 2009; Martin, 2010).[1] As Vaisey (2009) has pointed out, the key set of empirical materials that clinch the intuitions of toolkit theory in this regard come from the fact that persons are simply unable to report coherent accounts of the reasons why they engage in certain lines of action. Thus, deeply internalized ''reasons'' (or systems of reasons, which is what Parsons (1935) referred to as ''value systems'') cannot be the (efficient) ''causes'' of social action.

[1] In fact as Cowan (2001) notes George Miller's ''magical number seven plus or minus two'' generalization (the notion that persons can only keep about 5–9 active ''chunks'' or pieces of information active in short term memory was an *optimistic* estimate. Fifty years of research have shown that the actual short term memory capacity is closer to three or four active chunks. Thus, humans are even more cognitively impoverished than has been usually thought.

This implies a critique of socialization models that operate via the ''psychological modification'' of actors as ultimately begging the question: ''[c]ulture does not influence how groups organize action via enduring psychological proclivities implanted in individuals by their socialization. Instead, publicly available meanings facilitate certain patterns of action, making them readily available, while discouraging others'' (Swidler, 1986:283). What actors inherit from the social environment is instead a set of heuristics, hunches and shallow (but useful because they work most of the time) *practical skills* that allow persons to best interface externalized structures, contexts and institutions (Swidler, 2003). This accounts for why persons are observed to act *as if* they had internalized detailed, highly structured cognitive and normative templates.

Institutions and contexts and other forms of objectified cultural structure thus become reconceptualized as *supports for action*. This external scaffolding thus comes to play a key role in accounting for the systematicity of action in the toolkit approach. Institutions and readily available cultural codes—because they are the external scaffold that actors rely on to generate orderly behavior patterns—can create order and behavioral regularities in the presence of cognitive incoherence at the micro-level (Zucker, 1988; Clark, 1997:179–192; Swidler, 2000, 2003; Sewell, 2005).[2] Thus toolkit theory provides a solution for both Parsons' original ''problem of order'' as well as the ethnomethodological ''cognitive problem of order'' (Heritage, 1984:70).

What is appealing about this formulation is that we get to keep the phenomenon of interest (e.g. systematic patterns of human social behavior) without relying on the doubtful (and empirically unsustainable) assumption that entire cognitive representations of the social world, whole systems of values or logically organized conceptual schemes have to be internalized by social agents. This is what Bloch (1986) has referred to as the ''anthropological theory of cognition'' that has bedeviled post-functionalist cultural analysis. This observation becomes even more poignant when it is realized the human cognitive system is just too ''simple'' for this to be possible (Martin, 2010). Instead, toolkit theory can explain systematic social action by pointing to the undeniable fact that what makes humans institutions unique and useful is the huge amount of externalization and ''outside the head'' elaboration that all actors inherit (Zucker, 1983).

2.1.1. Toolkit theory as an externalized cultural scaffolding theory of cognition

If the classical account of socialization theory can be characterized as one in which ''socialized'' means ''developing a small model of the social and natural worlds inside the agent's head,'' the newer toolkit model can then be thought of as a ''scaffolded cognition'' model in philosopher Andy Clark's (1997:45–47) sense. That is, given the obvious limits on human cognition (processing, storage, retrieval, etc.) that have been the hallmark finding in cognitive

[2] Swidler (1986) naturally denies that culture is systematically organized in the first place; as she famously put it ''[a] culture is not a unified system that pushes action in a consistent direction. Rather, it is more like a 'tool kit' or repertoire.'' This means that even if the human cognitive apparatus was ''complex'' enough to be able to cognitively swallow entire, logically integrated cultural systems, these systems are simply not out there to be found. This view of culture as largely external, ''fragmented,'' ''contradictory,'' ''weakly bounded'' and ''contested'' has become the *de facto* standard in contemporary discussions in cultural sociology (e.g. Sewell, 2005:169–172) and even among ''post-cultural'' anthropologists (e.g. Hannerz, 1996) the latter of whom have thoroughly rejected the ''myth of cultural integration'' (Archer, 1985) inherited from their forebears. Contemporary theory in cultural sociology also thoroughly supports the toolkit theory's proposal as to how coherence can become a rare possibility in some delimited empirical contexts.

science (this being Herbert Simon's central contribution as Martin (2010) points out), it stands to reason that systematicity in behavior cannot come from the (question-begging!) systematic operation of some cognitively greedy—and empirically implausible—Parsonian ''central pattern generator'' (CPG) located inside the social agent's head.[3] As Swidler emphasized in her classic essay, ''[p]eople do not build lines of action from scratch, choosing actions one at a time as efficient means to given ends. Instead, they construct chains of action beginning with at least some *pre-fabricated* links'' (Swidler, 1986:276, italics added).

Thus in a somewhat surprising cross-disciplinary convergence, both Swidler (vis a vis sociological functionalism) and ''embodied and embedded cognition'' researchers in cognitive science (vis a vis ''functionalist'' cognitivism) and artificial intelligence offer (schematically) analogous solutions to the behavioral systematicity issue: coherence is offloaded into the external (social, contextual, institutional and material) world (Brooks, 1997[1991]; Clark, 1997; Swidler, 2003:183).[4] In embodied and embedded AI, seemingly ''dumb'' and cognitively ''simple'' agents can exhibit smart behaviors in natural ecological settings if they are provided not with a complete representation of the external environment, but with a series of ''rules of thumb'' or ''heuristics'' with which to locally manage ''around'' currently relevant slices of this world.[5]

This now well-established research program in Artificial Intelligence (see Clark, 1997 for a review; Brooks, 1997[1991] provides the theoretical manifesto and the empirical evidence that it works) has produced enormous gains (and engineering applications), precisely in the areas where the symbol-manipulation cognitivism of ''good old fashioned artificial intelligence'' (e.g. functionalist cognitivism) failed in the most spectacular of ways: in producing realistic artificial agents that can negotiate their way in concrete spatial environments; namely, self-locomoting ''robots'' (Clark, 1997:11–33). In a similar manner, connectionist approaches to the development of realistic cognitive architectures that rely on similar principles (offloading most of the structure to the outside world and providing the agent with a few select principles to detect and reconstruct consistent patterns of phenomenal co-occurrence) have proven to be successful where traditional cognitivist AI attempts failed.[6] From this point of view, ''[i]n place of the intellectual engine cogitating in a realm of detailed inner models, we confront the embodied, embedded agent acting

[3] As Clark (1997:184) notes, ''[a] vital role for external structure and scaffolding is. . .strongly predicted by recent work on individual cognition. Simon's (1982) notion of bounded rationality was probably the first step in this direction.''

[4] In artificial intelligence, functionalism refers to a ''formalist'' (Lizardo, 2009) theoretical strategy that postulates that the ''proper'' level of description of the operation of the mind is located at an abstract level that is completely independent of the actual implementation of ''mind'' in the ''wetware'' (Clark, 1997) of the brain. Thus, ''[w]hile functionalism comes in various flavors, it [reflects] the now familiar idea that mind : body :: program : computer'' (Erneling and Johnson, 2005:17). Because the mind is the ''software'' that runs in the brain, there should exist a way to transcribe its operations into a unified ''language of thought'' applicable to the functional description of other artificial systems. From the functionalist point of view, as Lakoff and Johnson (1999:78) note ''[t]he mind is essentially, disembodied; it can be studied fully independently of any knowledge of the body and the brain, simply by looking at functional relations among concepts represented symbolically.''

[5] Compare with Swidler's memorable—e.g. cognitively catchy!—''echolocation'' metaphor of how culture is used by persons to locate themselves within their social environments: ''. . .cultural imagery is used somewhat the way bats use the walls of caves for echolocation. Bats know where they are by bouncing sounds off the objects around them. Similarly people orient themselves partly by bouncing their ideas off the cultural alternatives made apparent in their environments'' (Swidler, 2003:30). This is *precisely* the design philosophy undergirding the construction of cognitively realistic artificial agents in NEFAI (Brooks, 1997[1991]; Clark, 1997:11–33).

[6] For instance, in creating systems that can engage in fast, online categorization and pattern-extraction from exposure to noisy exemplars and which exhibit realistic learning trajectories (Bechtel, 1997; Clark, 1993).

as an equal partner in adaptive responses which draw on the resources of mind, body and world'' (Clark, 1997:47).

This is precisely the key insight of the toolkit approach in relation to the Parsonian notion of the unit act and the means-ends schema. In toolkit theory, in place of the social actor cogitating in an inner realm of detailed means-ends normative representations we confront the practical agent acting as an equal partner in the generation of creative and adaptive social responses (e.g. ''strategies of action'') by relying on the coupled resources minds, codes, contexts and institutions (Swidler, 2003, 2008). We can conclude that toolkit theory has been empirically successful for the very same reasons that embodied and embedded approaches in AI have been empirically (and practically) successful: they propose very ''lean'' models of the actor, which is seen as tightly interfaced with an external (institutional, contextual and relational in the case of toolkit theory) environment. They do not require either strong assumptions about ''socialization'' processes through which actors ''deeply internalize'' cultural information (or values, or codes) from the outside environment (Swidler, 1995), nor do they need to weigh down the actor with some predetermined set of internalized cultural objects which are mysteriously ''downloaded'' through unseen, undertheorized, underspecified (and ultimately implausible) mechanisms from an unseen, undertheorized, underspecified (and ultimately spurious) cultural ether (Turner, 1994; Lizardo, 2007).

2.2. *What kind of cognitive theory is toolkit theory?*

We can then summarize the question with which we began this section—what kind of cognitive theory is the toolkit approach?—as follows:

(1) It is *non-representationalist* (Clark, 1997:148–149) or at least strongly *anti-representationalist* in that it does not require that the social agent reproduce an internal model of whatever it is conceived by the sociologist to be external (e.g. value systems, cultural codes, ''models of reality'', etc.).
(2) It is a *''weak'' socialization theory*; that is, in contrast to either the classical account of socialization or ''strong'' practice theory, both of which presume some sort of systematic, lasting and ''deep'' modification of the actor by social experience, toolkit theory presumes that actors are only relatively ''lightly'' touched by their socialization history, being provided only with a loosely structured set of skills, heuristics, routines and shallow habits that allow them to best navigate (and select) which strategies of actions go best with which externalized institutional structure at a given moment. This is consistent with the toolkit approach's explanatory strategy of presuming as little ''systematicity'' at the actor level as possible, with most of the systematicity projected into the external environment (Swidler, 2003).
(3) Toolkit theory does this because it is at root an *externalized cultural scaffolding theory of cognition* in Clark's (1997) sense. Because toolkit theory is a ''cognitive miser'' theory in the vein of Simon (see also DiMaggio, 1997; Martin, 2010) in it can account for order even while assuming that persons have serious limits in the amount of information that they can store and in the amount of coherence or systematicity that they can force on this information. Precisely because it does not buy into the misleading notion that persons must have deeply internalized or coherent representations of their social, cultural, institutional and normative environments (and given the postulate of cognitive misery, they *cannot* have these kinds of representations) then they must rely on and take cognitive

advantage of external institutional and contextual crutches to produce coherent lines of action.[7]

3. (Strong) practice theory as a cognitive theory

While certainly appealing (and empirically successful in comparison to its clunky "value-internalization" predecessor), the toolkit (or external cultural scaffolding) model has produced some misgivings on the part of those who wish—maybe due to some remaining theoretical hunch that a lot of structuring of human social behavior is "internal" to the social agent—to partially preserve the notion of socialization as the internalization of something (Strauss and Quinn, 1997). From the practice perspective, the toolkit model relies too strongly on the idea that the structuring of action is external to the actor (an explanatory strategy that Vaisey (2008) has recently characterized as "Skinnerian"). The "French" branch of practice theory—in particular that associated with the work of Pierre Bourdieu (1990) and Loic Wacquant (2004), which extends back to the classical legacy of Marcel Mauss (1973)—attempts to go beyond the limitations of the traditional socialization model—whether functionalist "values plus conceptual scheme internalization" accounts or the more recent appeal to "cultural codes" while attempting to give some place to the notion that actors are fundamentally and deeply modified as the result of recurrent experiences in a given social setting.

Practice theory attempts to rebuild an account of "socialization" that makes room for some lasting modification of the cognitive (and ultimately bodily) make-up of the social actor (Bourdieu, 1990:63, 2000), that is the assimilation of "public," extra-personal culture is thought of as resulting in embodied, intrapersonal culture (Strauss and Quinn, 1997:9). Practice theory, however, rejects both the *what* and the proposed mechanisms as to *how* this modification is accomplished—inherited from the classical tradition—while it broadens the notion of cognition inherited from the neo-Kantians (including most influentially Max Weber and Talcott Parsons) and German-American cultural anthropology (e.g. Boas, Mead and Kroeber): namely, cognition conceived as involving exclusively ideational or symbolic representations (Bloch, 1986, 1991).

3.1. What kind of cognitive theory is practice theory?

Having established the kind of cognitive animal that the toolkit theory of culture and cognition is, it is easy to characterize the type of cognitive theory that strong practice theory is. We proceed by outlining the contrasts and commonalities between the two approaches along the four key axes identified above.

3.1.1. Anti-representationalism

Like toolkit theory, practice theory is an anti-representationalist theory. It stands opposed to all attempts to suggest that persons somehow imbibe or internalize overarching, historically

[7] A reviewer suggested certain obvious commonalities between the toolkit formulation of scaffolded cognition and anthropological and sociological theories of "distributed cognition" (e.g. Hutchins, 1995). We agree that the toolkit and distributed cognition approaches share a lot of emphasis, however, we believe that distributed cognition theorists obfuscate the issue by making equivocal statements about the *location* of cognitive processes (Strauss and Quinn, 1997). We share Bloch's (2007:69) "literal mindedness" in noting that cognitive processes must have a concrete location and cannot float around unmoored outside of the person's skin. We do note however, that the toolkit approach makes explicit something that remains implicit in the distributed cognition account. Is not that cognition is always uniformly distributed among agents, locations, artifacts, etc. but that persons "rely on others at the very moment they are no longer able to rely on their own knowledge" (Bloch, 2007:70).

emergent, and logically integrated cultural structures or ''conceptual schemes''—whether these are conceived as normative systems in the Parsonian sense (1935), conceptual schemes in the neo-Kantian sense (Parsons, 1964), cultural codes in the Alexander/Lévi-Strauss sense (Alexander, 2003; Lévi-Strauss, 1966) or classificatory systems in the Zerubavelian (1993) sense. Just like in toolkit theory, in practice theory ''culture..is more like a style or a set of skills and habits than a set of preferences or wants'' (Swidler, 1986:275). It is not necessary to posit an actor endowed with elaborate ''models of reality'' allegedly required to generate coherent action in the world. We should also be suspicious of representationalist models of culture as ''patterns'' of cultural symbols popular in Geertzian cultural history (thus consistent with Biernacki's (2000) practice-theoretical critique of this approach). Practice theory rejects the ''anthropological'' theory of cognition that posits a ''non-individual and internally coherent [system]'' of meaning (Bloch, 1986:25)—still taken for granted in much of cultural sociology—in favor of a ''psychological'' theory of cognition in which ''cognitive systems are seen as the product of some kind of interaction between the subject and his environment'' (Bloch, 1986:21).

In contrast to practice theory, toolkit theory deals in a brand of anti-representationalism that is undergirded by the conviction—one that has roots in the sociology of culture that go all the way to Geertz (1973) and continue to this day in the work of Zerubavel (1999)—that it is not necessary to have an account of individual-level cognitive representation and actor-level cognition in order to go on with the business of explanation in cognitive and cultural sociology (see for instance Swidler, 2008:279–280). Practice theory, in contrast, is anti-representationalist only in rejecting *classical notions of mental representation* not in rejecting the necessity of developing an individual-level, experience-linked account of (non-symbolic, non-propositional) representation (Bloch, 1986; Toren, 1999). Practice theory proposes an alternative model of individual mental representation or, more accurately, suggests that we must distinguish between different representational systems at the actor level subject to different constraints in terms of process and storage. This distinction between two different mental systems is roughly consonant with Giddens' (1984) differentiation between *discursive* and *practical* consciousness (this last can be roughly considered to have a family resemblance to what cognitive scientists refer to as the ''efficacious'' *cognitive unconscious* (Lakoff and Johnson, 1999:115–117)).

In rejecting classical (linguistic and propositional) models of representation, practice theory makes the (somewhat radical) claim that language (or ''arbitrary'' symbolic representations) is not essential to understanding what we usually mean by culture (Bloch, 1991, 1998; Toren, 1999; Bourdieu, 2000:136). The practice account is consistent with recent proposals in cognitive science to the effect that the building blocks of culture are experiential, analog, and non-arbitrary ''perceptual symbols'' (Barsalou, 1999; Ignatow, 2007) and cognitive models built from ''image-schemas'' (Johnson, 1987). These are grounded in and actively *constructed from* bodily action and thus directly tied to dynamic learning trajectories bound to concrete experiences (Piaget, 1970; Bloch, 1986; Bourdieu, 1990; Lizardo, 2004).[8] These experiential schemes actually

[8] In contrast to the proponents of the ''strong program'' in cultural sociology who make informal use of the woefully underspecified notion of ''unconscious cultural structures'' (Alexander, 2003:3–4) which are somehow regularly structured and also regulate action, practice theory is careful to point out that if something is ''unconscious'' it is probably not stored in a linguistic (or pseudo-linguistic) format—such as systems of arbitrary, disembodied, binary oppositions—and cannot easily be ''redescribed'' (Karmiloff-Smith, 1992) in this format (in the very same way that a baseball player cannot easily verbalize how is it that they can hit a 95 mph fastball).

provide the conceptual bases on which language as a mode of expression and conceptualization is built (Langacker, 1991; Gallese and Lakoff, 2005).[9] In practice theory, culture is therefore not conceived as represented in the social agent's head in the form of linguistically coded propositions or beliefs (Bloch, 1991; Strauss and Quinn, 1997:44), much less as a logically integrated [!] "system" of such beliefs.[10]

3.2. Strong socialization

In contrast to toolkit theory, practice theory conceives of the socialization process as leaving long-lasting "marks" on the cognitive make-up of the actor. There are two main reasons for why this is the case. First, practice theory sees the material (lived) environment—including objects, tools, artifacts, etc.—and the practical knowledge and tacit (non-propositional) presuppositions stored in objects and spaces (see Harvey, 2010) as being as important (and in some contexts more important) in the cultural transmission and acquisition process as the set of mechanisms that American sociologists prefer to focus on: person-to-person (invariably linguistic) interaction—in the contexts of emerging micro-cultures in small collectivities (e.g. Corsaro and Rizzo, 1988).

The active construction and repeated deployment of embodied cognitive schemes on the part of the actor as a result of person-to-object interaction and indirect person-to-object observation (e.g. watching others handle tools and other artifacts (Bloch, 1998) or link positions in space with authoritative rank (Toren, 1999)) are often aspects of the "socialization" process in which linguistically mediated interaction plays little or no role. From the practice perspective, socialization is best thought of as the protracted modification of the "mindful body" (Sheets-Johnstone, 1999:489) as a consequence of being "encompassed by" a given experiential environment (Bourdieu, 2000:130). This results in the acquisition of a "taste" for exposure to similar experiences, which durably impacts the person at a direct perceptual, motor-schematic (Bourdieu, 1990:69) and ultimately *motivational* level (Summers-Effler, 2004:280), insofar as the actor is bound to seek to recreate an environment in which tacit competences can be recreated and expressed. This is what Bourdieu (1984:468) has referred to as the production of "embodied social structures."

Consistent with its anti-representationalist stance, practice theory rejects the basic conceptualization of the *what* of socialization inherited from the classical account. In practice theory, the main sort of socialization "content" that is transmitted to persons as a result of being exposed to and encompassed by a given social environment does not consist of consciously held, propositionally stated "beliefs" unless we extend our notion of beliefs to include non-propositional, "practical beliefs" in Bourdieu's sense (1990:68–69).[11] Nor does it consist in the acquisition of "norms" or "rules." Instead socialization implies the

[9] This view is actually demonstrated by this sentence, which relies on the analogically specified "support" schema to clinch its point (Johnson, 1987).

[10] This model is thoroughly consistent with recent developments in the theory of categorization, metaphor theory, cognitive linguistics and cognitive neuroscience that have moved beyond early cognitivism and towards an "embodied" approach to cognition at the individual level (Lizardo, 2007; Ignatow, 2007).

[11] This is similar to the notion of "non-reflective beliefs" in cognitive anthropology. Barrett and Lanman (2008:111) define non-reflective beliefs as akin to tacit knowledge. They consist of "...cognitive representations that we have whether or not we know we have them. They are non-reflective in that they do not require conscious, deliberate, reflective resources to form them."

acquisition of irreducibly embodied schemes of action, stored in procedural memory and manifested as a form of ''skill.''[12]

This notion of skill should be understood broadly, as supporting various forms of so-called ''high-level'' mental functioning. Thus, practical skills include both practical ''classificatory'' schemes useful for context-sensitive, online categorization, operating below the level of conscious awareness and dynamic, implicit dispositions (of attraction or repulsion) toward certain types of objects (what in classical theory were usually described as ''attitudes'' or ''orientations''). Learning thus always requires some sort of deep bodily modification (e.g. like typing or riding a bike) or the schematic-transfer of some skill from one domain to another. This almost necessarily requires a lasting, direct, experience-linked (and thus dynamic) modification of the cognitive and motivational state of the actor (Strauss and Quinn, 1997).[13] What outside observers (and adults within a given culture) interpret as arbitrary symbolic (or linguistic) associations connected by layers or webs of meaning, are experienced by ''new'' entrants into the culture—such as children—as non-symbolic, direct representations of durable experiential realities (Bourdieu, 1990; Bloch, 1998; Toren, 1999).

Practice theory rejects the usual account of the *how* of socialization by jettisoning the primary mechanisms of transmission of the classical theory: (a) passive learning (''internalization'') through direct instruction, (b) ''introjection'' of entire, culturally authoritative conceptual systems or (c) conscious, active ''role-modeling'' or imitation of influential socially proximate others (e.g. ''peer groups''). Instead, practice theory suggests that in the very same way as what is transmitted is *implicit* and lives in ''practical'' and not ''discursive'' consciousness, the process of cultural transmission of practical culture is itself implicit and diffuse. Practical culture (e.g. skills, habits, styles, etc.) is ''transmitted through practice, in the practical state, without rising to the level of discourse'' (Bourdieu, 1990:73–74). The most important outcomes of the socialization process are never explicitly transmitted by so-called socializing agents (Wacquant, 2004; Lizardo, 2007).

3.3. Reliance on externalized cultural scaffolding for the production of coherent lines of action

Like toolkit theory, practice theory is a theory of cognitive and institutional externalization. This is the reason why Bourdieu sometimes sounds just like a ''toolkit'' theorist, in thinking of cultural fragmentation as the norm and cultural integration as the exception while offloading a lot of the cognitive activity of the actor to external structures and institutions. This allows toolkit theorists to partially draw on the Bourdieusian legacy without fears of contradiction (e.g. Swidler, 2003:193–194).[14] Unlike toolkit theory however, the reliance on objectified institutional

[12] This is a point that is shared with toolkit theory, but which practice theory actually develops further by inquiring as to the *types* of transmission mechanisms that are necessary for this type of ''implicit stuff'' to actually be able to be picked up by the social agent.

[13] In his later ''neurocognitive'' understanding of learning and socialization, Bourdieu described this process as ''durable transformation of the body through the reinforcement or weakening of synaptic connections'' (Bourdieu, 2000: a formulation compatible with recent work in neuroscience and cognitive anthropology (Edelman, 1992; Whitehouse, 1996).

[14] For instance, Bourdieu (1990: 295) criticizes Lévi-Straussian structuralism for ignoring ''the practical functions that symbolic systems perform'' thus imputing toward them ''more coherence than they have or need to have in order to function.'' Consistent with contemporary toolkit approaches to culture, which see fragmented, non-integrated cultural systems as the norm, Bourdieu notes that these systems are best thought of ''as the product of history, which...remain [quoting Lowie] 'things of shreds and patches'.''

structures is not used as a mechanism to explain coherent patterns of practice in the *absence* of deep internal modification of the cognitive makeup of the actor. As Bourdieu (1990:56) notes, the emergence of an Aristotelian second nature inscribed in the body is what ''gives practices their *relative autonomy* with respect to external determinations of the immediate present.'' Thus, consistent with the ''strong socialization'' thesis, practice theory acknowledges that actors are ''deeply'' and ''lastingly'' modified by virtue of having a history of recurrent experiences in particular institutional and material environments and that much coherence in social action emerges from a *match* (not a complete offloading) between implicit, embodied dispositions and external institutional environments (Bourdieu, 1990, 2000).[15]

This opens up some analytic room to consider notions of systematicity at the level of practices (or sequences of choices made at a practical level) such as classificatory *judgments* made in real-time (Bourdieu, 1984:468). This can be done even while agreeing with the toolkit theorist's skepticism of the existence of the same sort of systematicity or (socio)logical integration at the level of linguistic, symbolic or other sort of explicit representational systems of ''ideas'' or ''codes.'' The person's inability to translate clearly systematic patterns of skill, practical competence (social or otherwise) or ''choice'' into equally ''systematic-sounding'' explicit representations of those skills and competences—with systematicity usually judged according to the standards produced by scholastic institutions (Bourdieu, 2000) such as ''logical'' integration—does not mean that we should be skeptical about the existence of a systematic ensemble of practice-generating structures at the implicit level.[16]

Practice theory thus partially sidesteps the ''poverty of cognition'' objection that the toolkit approach directs at the classical account by pointing out that the mnemonic capacity of practical consciousness, as well as its active ability to engage in systematic, context-sensitive forms of pattern-extraction from the environment (Clark, 1997), far exceeds that of discursive consciousness. To the ''cognitive miser'' postulate of toolkit theory, practice theory adds the postulate of practical consciousness as a fast *associative engine* and *pattern-completion* system (Clark, 1993, 1997:67), which establishes ''all sorts of practical equivalences between the different divisions of the social world'' (Bourdieu, 1984:475). The wager of the (strong) practice theorist is that systematicity will be found at this level, especially when we allow time for the outcomes of these choices and ''moves'' in social space to accumulate over time. Agents (socializing and those being ''socialized'') always know more than they can tell (Bourdieu, 1990:69; Bloch, 1998) and thus, we may not conclude from the agent's inability to produce a coherent ''redescription'' into official language of what has been internalized (the key empirical finding of the ''toolkit'' research program) that nothing systematic has been internalized (Bloch, 1998; Vaisey, 2008, 2009). Instead, we should look for systematicity at the level of practice, intuitions and ''hot'' and ''fast'' (not deliberative) ''choices'' (e.g. who to marry, what to wear, cultural likes and dislikes, moral intuitions).

[15] From this perspective, the unit of analysis becomes the relation between the embodied dispositions of relatively autonomous actors and the external institutional environment they confront on the level of practice. This can be observed in Bourdieu's consistent focus on the relationship between the history embodied in actors and the history objectified in fields.

[16] Practices, however, need not be systematic in order to be effective, and in this respect, practice theory does acknowledge that a lot of systematicity may (and routinely is) offloaded into the external environment, especially in post-traditional societies.

3.3.1. The myth of love in toolkit theory

Take for instance, Swidler's (2003:130) observation that ''[c]ulture develops capacities for action and culture proliferates where action is problematic'', a proposition which she uses to explain the reason for why the ''myth of love''—the notion that there is a single romantic partner that is meant for every person and that true love can only develop in a relationship with this special person—crops up precisely at the juncture for which there is the least explicit institutional prescription for action: the criteria that are to be used in selecting a romantic partner. Essentially Swidler argues that it is precisely between the gaps and the interstices of institutions where (explicit) culture of this sort grows (Swidler, 2003:132). This implies however, that there is no ''overarching'' cultural logic that explains the existence of the myth of love. Instead this myth is resorted to by individuals to provide some parameters for their action that institutions fail to fill.

Swidler acknowledges that the myth of love is descriptively sterile but pragmatically useful. The implication of Swidler's (2003) analysis however, is that the choice of romantic partners obeys no actual regularities and that it is in fact determined by idiosyncratic events unique to each person's life trajectory, choices which are then rationalized post hoc by each person as confirming the status of their chosen partner as their ''soulmate'' and of the emotional quality of their relationship as ''true love'' (the same myth can be used to justify failed relationships of course). The key theoretical point is this: the ideology of true love does not ''use'' people—as in the analysis that would follow from a traditional ''critique of ideology'' perspective—but people use it (to solve practical problems determined by the specific contour of institutional arrangements and lifecourse trajectory). Beyond this, ''there is nothing to see here'' especially if you are a cultural theorist hanging around looking for some sort of overarching regularity or cultural pattern in romantic partner choice.

3.3.2. The myth of love in practice theory

A practice-theoretical analysis of romantic love partner choice however, leads to different conclusions. First, a practice-theorist will point out that like any other process of choice, romantic partner choice occurs at an implicit level and is determined by a mutual, embodied match between the practical dispositions of the two agents that so happen to ''choose one another'' (Bourdieu, 1984:241). If we go by the explicit justifications for choice produced by actors in the modal interview situation we would be misled, since persons would all seem to justify their choice using the institutionalized language of the ''myth of love'' (Swidler, 2003) or of romantic attraction as an ''overwhelming, irrational force'' completely orthogonal from practical-rational considerations (Illouz, 1998).

However, the fact is that romantic partner choice is anything but random and the result is substantial rates of practical rationality (e.g. matching on cultural and social background aptitudes and tastes) beyond that which we would expect if purely idiosyncratic factors (such as the opportunity structure—''induced homophily''—of partners available to persons of different social strata) were the only ones at work. Faced with this evidence of ''social reproduction'' at the point in which action seems to be the least determined by social and institutional factors and most open to individual idiosyncrasy, most persons would of course reject the implications of the evidence, since a key component of the ''myth of love'' is that anybody can in principle find true love with anybody else regardless of the original positions in social space occupied by each of the two potential romantic partners (Illouz, 1998).

In this way, the existence of the myth of love can be thought of in another way: as a form of institutionalized dissociation between practical and discursive consciousness (similar to ones observed in the realms of cultural choice and moral reasoning). Culture crops up in this realm, for

the same reason that it crops up in other realms in which practical action results in behavior that has important social implications: it is a way of providing a conscious justification (or vocabulary of motive in Mills' (1940) sense) for outcomes the ultimate sources of which necessarily escape this type of ordinary reflection (Bourdieu, 2000).

The key implication from a practice-theoretical viewpoint is that just in the very same way that persons can rely on the ''myth of idiosyncratic taste'' to explain their cultural choices when those choices can be shown to be anything but idiosyncratic (they are patterned by social position), persons rely on the myth of love precisely because they don't have access to criteria that resulted in their being attracted to (or repelled by) a potential romantic partner (Illouz, 1998:240–246). Patterns of attraction and repulsion (in the romantic and other realms) nevertheless, obey a distinct, decipherable practical logic (Bourdieu, 1990), one that the analyst may be able to recover (by for instance analyzing the social distribution of romantic partner choices), and one that would show some unexpected patterns of consistency and order, *precisely* because it is a realm that does not carry much explicit institutional prescriptions.

4. Specifying linkages between embodied social structures and externalized cultural scaffolding

The above analysis suggests that toolkit and strong practice theories have both large areas of overlap and key points of divergence. Both toolkit and strong practice theories agree that most culture is implicit and exists at the levels of skills, habits, fast dispositions and implicit classificatory schemes. However, empirical applications of the toolkit approach have primarily dealt with agents own discursive accounts of how they manage to integrate divergent ''bits'' of *explicit* culture into their everyday attempts to craft strategies of action. Strong practice theory on the other hand, focuses on global patterns of behavioral coherence that are seen to be the result of choices made in the practical state, of which any discursive justification or explanation would be a very poor (predictive) source of information (Wilson and Nisbett, 1978; Vaisey, 2009; Vaisey and Lizardo, forthcoming) Both theories agree however, in proposing that the extent to which we may observe coherent lines of action is contingent on the existence of already objectified institutional realms: ''fields'' or ''objective structures'' in Bourdieu's (1990, 2000) sense; ''codes, contexts and institutions'' in Swidler's (2003).

This means that we should be able to delimit the class of phenomena that each approach is best equipped to handle, as well as those that they will have trouble with; this can serve as an analytic ''user's guide'' for those who wish to apply these theories to specific empirical situations. Table 1 shows the theoretical expectations extracted from both toolkit and practice perspectives regarding the operation of both discursive and practical consciousness under three different likely configurations of the ''external cultural scaffolding'' that social agents may find themselves embedded in.

The table makes explicit something that has only recently become clear in the toolkit perspective. Swidler (1986) introduced the influential distinction between ''settled'' and ''unsettled'' times in her original theoretical statement. Since then, it has become clear in more recent reformulations—in particular Swidler (2003)—that strategies of action deployed in ''settled'' contexts can take on two quite different appearances depending on whether the specific lines of action are occurring in a setting that provides strong external structuration—there exist clearly delineated lines of action prescribed by the current institutional order—or is occurring between the ''crevices'' or across the ''gaps'' of the settled institutional structure, where explicit prescriptions are weak and agents have apparently more discretion (but also more rule-based

Table 1

	Discursive consciousness	Practical consciousness (*habitus*)
Stable, pre-existent socio-cognitive scaffolding	*Strong external prescription* Quiescent, reliance on and cognitive exploitation of objectified institutional structures to generate and organize lines of action.	*Strong external prescription* "Ontological complicity" between embodied habits and skills and objectified institutional orders, unconscious schematic transfer across institutional domains.
	Gaps in the institutional order Active, "cognitively optimal" use of already existing and widely shared vocabularies of motive, reliance on "institutional myths" to explain action; loose coupling or "dissociation" between justifications for action and actual patterns of action.	*Gaps in the institutional order* Production of globally coherent lines of action through "regulated improvisation" in unstructured choice situations; criteria of judgment refractory to discursive consciousness and hard to verbalize and "redescribe" into public language.
Unstable (or non-existent) socio-cognitive scaffolding	*Early* (*before reflexive recognition*) Continued reliance on existing vocabularies of motive, cognitively optimal attempts to explain away anomalies.	*Early* (*before reflexive recognition*) Misfiring/hysteresis/*allodoxia*
	Late (*after reflexive recognition*) Reflexive, "cognitively costly" search for and possible development of novel explicit cultural patterns ("ideologies"), rule-based, consciously monitored schematic transfer across institutional domains.	*Late* (*after reflexive recognition*) Retooling/retraining/acquisition of new habits and skills/readjustment of future expectations.

uncertainty) in making decisions. In terms of a theory of culture and cognition, this is essentially the difference between "highly scaffolded choice" settings and cases of "more weakly constrained individual cogitation" (Clark, 1997:181–182).

We have substituted Swidler's (1986, 2003) "settled" versus "unsettled" binary for our current (and we believe analytically more precise) distinction between contexts in which actors can rely on externalized, stable cultural scaffoldings, and thus exploit existing structure to guide their behavior by engaging in cheap, cognitively optimal heuristics at the level of discursive consciousness (Clark, 1997), and contexts in which this externalized scaffolding is absent or non-existent (e.g. periods of institutional change or transformation, Clemens and Cook, 1999), and in which reliance on more "cognitively costly" (Whitehouse, 2004) reflexive cognition becomes necessary.[17] We have also differentiated between two kinds of "unsettled" contexts depending on the timing and the reflexive recognition of the agent that the taken-for-granted cultural scaffolding is still there or not. The table is then generated by cross-classifying the two major forms of cognitive functioning emphasized in recent "dual process" models (Vaisey, 2008, 2009; Vaisey and Lizardo, forthcoming) and first outlined in Giddens' (1984) theory of structuration

[17] This is consistent with the definition of institutions as objectified cognitive structures (Zucker, 1983).

with what we consider the most theoretically relevant configurations of the external institutional environment.

4.1. Stable, pre-existent cultural scaffolding

4.1.1. Strong external prescription: discursive consciousness

Stable cultural scaffoldings ''obscure'' the influence of explicit cultural patterns on action (Swidler, 1986:280), and result in somewhat of a ''loose coupling'' between explicit, verbalizable culture and practical action (Meyer and Rowan, 1977). At the level of discursive consciousness, we should find a discursively ''quiescent'' actor who apparently does not rely that much on explicit cultural models or who appears to draw on those readily available pieces of prescribed culture that are made accessible to her during her daily navigation of established institutional orders. When an objectified cultural scaffolding is there, ''[p]eople [appear to] naturally 'know' how to act'' and ''culture and social structure are simultaneously too fused and too disconnected for easy analysis'' making it ''particularly difficult to disentangle cultural and structural influences on action'' (Swidler, 1986:280–281).

4.1.2. Strong external prescription: practical consciousness

We hasten to add however, that we reject the implication—somewhat left unclear on most major theoretical statements of the toolkit approach, mostly because Swidler tends to use the overall term ''culture'' to refer almost exclusively to objectified, ''explicit'' culture—that culture (in general) *does not matter in actually driving action*.[18] Just because persons (or the analyst) have difficulty recognizing culture as mattering at the discursive level, or because the agent's action is not driven by the search for more overt cultural models, does not mean that the culture embodied in implicit schemes of perception, appreciation and action is not mattering. At the level of practical consciousness culture is mattering plenty, for the simple reason that actors simply would be unable to navigate (or make use of) the available external cultural scaffolding without the set of skills and practical competences stored and embodied in habitus. At this practical level the key phenomenon of interest is what Bourdieu referred to as the *ontological complicity* between habitus and field, ''a practical mastery of the world's regularities which allow [the person] to anticipate the future without even needing it to posit it as such'' (Bourdieu, 1990:12).

This ontological complicity is precisely what makes it hard to disentangle cultural from ''structural'' influences under these conditions (Swidler, 1986:281), as both embodied dispositions and skills and objectified cultural scaffoldings appear to become ''locked-in'' in a mutually supportive dialectic, and the actor appears to be a ''fish in the water'' at the level of practical consciousness (Bourdieu, 1996b:289). Toolkit theories predict that under these conditions, at the level of discursive consciousness we should observe global fragmentation of behavior which can be easily mapped to whatever fragmentation is characteristic of the objectified cultural and institutional order. At the level of practical consciousness however, practice theory predicts that the ''practical logic'' generative of action should produce a strong (local) coupling between embodied schemes and the extant objectified cultural scaffolding. This

[18] Swidler recognized as much in noting that when externalized cultural scaffoldings are available and are stable, ''culture has an effect in that the ability to put together. . .[action strategies]. . .depends on the available set of cultural resources. Furthermore, as certain cultural resources become more central in a given life, and become more fully invested with meaning, they anchor the strategies of action people have developed'' (Swidler, 1986:281).

may generate fairly intense levels of practical (but not logical) coherence between implicit expectations built from previous experiences in analogous institutional settings and the opportunities and constraints made available by the existing externalized cognitive supports that canalize action (Bourdieu, 1990). Persons should be able to ''skillfully'' (Fligstein, 2001) navigate institutional environments encountering very little resistance to the implicit, repeated episodes of micro-anticipation that they engage in during the course of their everyday routines.

4.1.3. Gaps within and between institutional orders: discursive consciousness

Nevertheless, precisely because externalized cultural scaffoldings are never totally integrated and fused into (socio)logically integrated system (Friedland and Alford, 1991; Archer, 1996), all institutional domains contain ''gaps'' at the interstices of which externalized cultural scaffolding breaks down and individuals appear to be left to their own devices. Notice that these ''crevices'' located at the interstices of well-established objectified domains exist in the context of relatively stable cultural scaffolding in other domains of social life (Swidler, 2003). Toolkit theorists have observed that within these domains—e.g. relatively unstructured choice settings with located ''betwixt and between'' relatively stable objectified cultural orders—explicit culture grows and demand for ''institutionalized myths'' (Meyer and Rowan, 1977) that provide vocabularies of motive with which to justify choice behavior is most potent. According to Swidler (2003:132), ''people create more elaborated culture where action is more problematic. As institutions constrict discretion, they reduce the need for cultural elaboration. . .Culture then flourishes especially lushly in the gaps where people must put together lines of action in relation to established institutional options.''

4.1.4. Gaps within and between institutional orders: practical consciousness

While the prediction of the toolkit approach are correct as they stand, we believe that they miss the most important class of empirical phenomena that occur ''between the crevices'' of objectified cultural scaffoldings. For it is here precisely that the *regulated improvisation* (Bourdieu, 1990:57; Strauss and Quinn, 1997:53) of the habitus comes into play in the generation of choices that are apparently unplanned and spontaneous—areas of life, such as romantic partner choice, apparently ''abandoned to arbitrariness'' (Bourdieu, 1990:200)—but which actually allow for the ''deep'' embodied dispositions, produced through consistent, protracted experience in externally structured environments (with a weight towards early, influential experiences) to come through with even fuller force. This type of action as Strauss and Quinn (1997:54) note is improvisational because ''it is created on the spot'', but it is also regulated because it is ''guided by previously learned patterns of associations'' and is thus not ''improvised out of thin air.''

As we argued above, in structurally ill-defined settings, the dissociation between the two primary modes of cognitive functioning—rule-based and slow, and ''intuition-based'' and fast—will be most acute, with persons using the fast, cognitively optimal, regulatory improvisations of the *habitus*, based on implicit intuitions and practical judgment, to make, practically systematic, context-sensitive choices in real-time, and only later using externalized bits and pieces of the explicit cultural environment—which will take the form of ''institutionalized myths'' such as the ''myth of love''—to explain their choosing one line of action over another to both themselves and others (Wilson and Nisbett, 1978; Barrett and Lanman, 2008:112). In these institutionally ill-defined crevices, the embodied dispositions of the *habitus* will be most prevalent and the implicit culture stored as embodied dispositions will be most likely to shape choices. This will make strong practice theory a much better predictor of actual behavior than toolkit theory, which can

only predict the disconnect between action and the cultural justification of behavior, but would be powerless to shed light on the practical logic generative of choices and in the relatively stable ''global'' patterns generated by these seemingly ''spontaneous'' lines of action (such as cultural ''homophily'' in friendship Vaisey and Lizardo, forthcoming) or romantic partner choices (Illouz, 2007)).[19]

The key theoretical implication is this: in contrast to toolkit theory which predicts either institutionally constrained patterns of action when agents are making choices in highly externally structured environments or path-dependent, historically idiosyncratic and locally constrained lines of action (which are made spuriously comprehensible when actors draw on cultural stuff from the outside environment) when it comes to negotiating the murky interstices of institutions where there is very little explicitly prescribed (or proscribed) behavior, practice theory predicts that agents will produce (globally) coherent patterns of thought and action even when institutional prescriptions and contextual effects are weak and thus they cannot rely on externalized cultural scaffolding. In the absence of this external cultural scaffolding, agents will rely on the coherence and ''regulated improvisation'' made possible by their internalized practical dispositions, especially those that produce fast, ''hot'' cognitive-emotive judgments of right/wrong, like/dislike, propriety/impropriety ''online'' and ''on the fly'' as suggested by dual process models of cognition in social psychology. Seemingly unstructured action contexts, especially those that lie at the interstices of externally established institutional structures—such as educational gatekeepers commenting at their own discretion on a student's paper or personal statement (Bourdieu, 1996a)[20]—can thus produce structured choices and judgments through the mediation of practical consciousness and habitus, and without any discursive access to the criteria according to which the choices in the moral, cognitive or aesthetic realms were made.

4.2. *Unstable (or non-existent) cultural scaffolding*

A key prediction of toolkit theory is that explicit culture and cognitively costly forms of cultural organization and integration will tend to occur during periods in which taken-for-granted external scaffolding for action break down and persons are forced to search for new cultural models with which to organize alternative lines of action. From the point of view of ''dual-process'' models of cognitive functioning (Vaisey, 2009; Cerulo, 2010; Harvey, 2010), however, the theoretical treatment of these unsettled periods—such as the student protests of 1968 in France (Bourdieu, 1988)—are incomplete. First, as noted above, toolkit theory restricts its prediction to social behavior that can be located at the level of explicit culture and discursive consciousness, but does not fully theorize what happens to embodied skills and habits in contexts in which their habitual implementation becomes problematic—save for Swidler's nod to the notion of ''cultural lag.''

[19] The institutional gaps that facilitate the regulated improvisation of the *habitus* can range from (1) job interview situations in which the gate-keeping agent enjoys wide leeway and makes decisions based on so-called ''snap'' judgments driven by perceptions of cultural compatibility; (2) those organizational settings that encourage the activation of powerful shared schemes that unconsciously typify members of a given ethnic or gender category; to (3) those consumption settings in which individuals must make choices with very little externalized cultural scaffolding to use as a guide.

[20] The last thing that any teacher or college admissions gate-keeper would think of is that the quality of their comments or their judgment that a particular candidate is adequate is somehow statistically associated with the student social background. The fact that they are (Bourdieu, 1996a), demonstrates that judgments of scholarly quality are not disconnected from the recognition and retrieval—mostly at an implicit level—of qualities of writerly self-presentation that are not equitably distributed among different social strata.

Second, and most problematic, the original definition of the very notion of ''unsettled'' period is restricted to the agent's reflexive recognition that things are in fact unsettled. However, this ''social constructionist'' collapse of the definition of what an unsettled period is to the agent's recognition is not warranted, since external scaffoldings for action could be dissolving (or have already dissolved) or could be in the process of radical transformation without the agent yet reflexively realizing it. This is analogous to the usual situation in most cartoons in which the animal walks off a cliff but keeps ''hanging in the air'' and does not start to fall until it looks down and realizes that it has, indeed, walked off the cliff. Practice theory predicts that the systematic production of such ''Don Quixote'' effects should predate periods of reflexive recognition of unsettledness (Bourdieu, 1984, 1988, 1990). This generates a host of systematic phenomena which have been theorized in practice theory but not in the toolkit perspective.

Thus it is important to begin to explicitly conceptualize two types of—sequentially ordered—facets of periods in which externalized cultural scaffoldings for action break down: ''early'' periods in which actors still attempt to implement old, habitual strategies of action in objective contexts that no longer facilitate them, and ''late'' reflexive recognition that this scaffolding has indeed broken down, which (may) set off the conscious search for new models.

4.2.1. Early (before reflexive recognition): discursive consciousness

Institutionalized cultural scaffoldings for action can begin to break down before persons realize that they are no longer available to sustain a given line of action. The analogy with Lakatos' description of what happens to ''degenerative research programs'' which begin to be subject to increasing empirical disconfirmation is clearly evident—in fact, Swidler (1986:283) made explicit the connection between the toolkit explanation for cultural change and post-positivist explanations of theory change such as Kuhn's—although the key point is that even when things have already begun to change and old scaffoldings for action no longer support certain lines of action, actors may attempt to engage in ''repair'' (Garfinkel, 1967) rather than searching for new ways of organizing their action. Thus, at the level of discursive consciousness persons are expected to mobilize a seemingly endlessly labile armamentarium of justifications and framing strategies that serve to manage their perceptions and in fact ultimately delay the recognition that a particular taken-for-granted external structure for organizing action no longer can be relied on.

4.2.2. Early (before reflexive recognition): practical consciousness

At the level of practical consciousness, persons however, are expected to continue to take for granted previously existing external structures used to organize action and in fact calibrate their practical behavior, judgments and expectations ''as if'' nothing has yet begun to change; previously embodied dispositional patterns carry their own inertia and stubbornness (Bourdieu, 1984, 2000). When externalized cultural scaffoldings begin to break down (e.g. or do so suddenly as in migration to a new culture) practical consciousness appears to ''misfire'' in its attempt to deploy embodied, persistent practical schemes of perception, appreciation and action (e.g. patterns of practical anticipation) under conditions increasingly ill-suited for them. Only when subject to a rather protracted period of disconfirmation and ''failure'' will they be open to modification and possible ''retooling.''[21]

[21] This was recognized by Swidler (1986:281) when she noted that ''[p]eople do not readily take advantage of new structural opportunities which would require them to abandon established ways of life. This is not because they cling to cultural values, but because they are reluctant to abandon familiar strategies of action for which they have the cultural equipment.''

Thus, during periods in which external cultural scaffolding can no longer be exploited, we should expect to observe a key phenomenon in practical consciousness: *hysteresis*. This produces a ''false anticipation of the future'' in which the practically induced sense of ''the probable future is belied [where] dispositions ill-adjusted to the objective changes. . .are negatively sanctioned because the environment they encounter is too different from the one to which they are objectively adjusted'' (Bourdieu, 1990:62).

The notion of hysteresis is of prime importance in showing the empirical implications of the very different model of individual cognition proposed in practice theory. Here, in contrast to the classical model, online, context-sensitive ''anticipations'', rather than being thought of as explicit and consciously worked out, are actually—at the level of practical consciousness—*implicit*. They are in this sense based on a hard to verbalize practical ''belief'' that the future will be similar to the past. The *habitus* forms expectations using direct, experience-linked, dynamically generated associations keyed to its exposure to correlated events. It is thus an ''associative'' and not a ''rule-based'' (e.g. compositional and fully productive as in rational-action theory) system of expectation formation. These recurrent experiential patterns, as Bourdieu (1990:63) suggests, ''ensure immediate correspondence between the. . .*ex ante* probability conferred on an event (whether or not accompanied by [explicit] subjective experiences such as hopes, expectations fears, etc.) and the. . .*ex post* probability that can be established on the basis of past experience.''

This is consistent with recent proposals for ''dual-process'' models of reasoning in cognitive psychology (associative versus rule-based computation).[22] Sloman (1996:4) characterizes the associative cognitive system as encoding and processing the ''statistical regularities of its environment, frequencies and correlations amongst various features of the world.'' Associative cognitive systems are thus ''able to divide perceptions into reasonable clusters on the basis of statistical (or at least quasi-statistical) regularities. . .associative thought uses temporal and similarity relations to draw inferences and make predictions that approximate those of a sophisticated statistician'' (another instance of how practical consciousness is not necessarily characterized by the cognitive misery of discursive consciousness).

The key theoretical implication is as follows: repeated experience with external cultural scaffoldings for creating and managing lines of action, thus ''train'' practical consciousness to expect them to be consistently available, even when they are no longer around to support action. In this way, previously developed modes of perception and appreciation are applied under circumstances which are no longer objectively appropriate.

4.2.3. Late (after reflexive recognition): discursive consciousness

What happens when persons cannot rely on taken-for-granted externalized cultural scaffolding to generate and organize lines of action? Both toolkit and practice-theoretical approaches converge in their predictions in this respect. When actors can no longer credibly exploit external structure or bootstrap their activity through them to generate behavioral coherence, we should observe the emergence of ''reflexivity'' at the level of discursive consciousness and the explicit statement of clearly delineated cultural systems, on which some institutional entrepreneurs may

[22] Dual process models of reasoning agree with toolkit and practice models in one key respect. Cultural coherence in belief systems is not a requirement. Instead ''People may have an urge for coherence, but that urge is for local coherence. People apply rules in such a way that current explanations, the temporary contents of working memory, are internally consistent and consistent with the long-term knowledge deemed relevant. The demand for coherence does not go beyond that; a person does not expect his or her beliefs to constitute a grand, unified theory that pertains to every aspect of existence'' (Sloman, 1996:18).

attempt to impose (socio)logical coherence and even (Weberian) ''logical'' logic. These are the ''high-ideology'' contexts that Swidler (1986:278–279) identified in her classic paper. There she defined ideologies as ''explicit, articulated, highly organized meaning systems (both political and religious)'' that persons attempt to use in order ''to establish new styles or strategies of action'' when old, taken-for-granted externalized scaffoldings for action are disrupted, or come under explicit challenge by members of opposing groups. Under these conditions, seemingly ''meaningless'' patterns (in stable scaffolding contexts) of belief and practice come to be charged with crucial meanings resulting in group polarization and bouts of ideological organization at the ''cultural system'' level keyed around a predictably small (e.g. cognitively manageable) set of ''take off'' issues or cultural practices (Swidler, 1995; Whitehouse, 2004; Baldassarri and Bearman, 2007), especially when deployed in contexts that are conducive to disambiguation and amplification (Swidler, 1995:35–36).

In toolkit theory, it is precisely during these periods that ''explicit'' culture may be thought of as having a direct, independent effect on social action ''because it makes possible new strategies of action-constructing entities that can act. . .shaping the styles and skills with which they act, and modeling forms of authority and cooperation'' (Swidler, 1986:280). There are two major caveats that have to be kept in mind regarding this set of predictions from the point of view of practice theory and recent research in cognitive science. First, the development, expression and attempt to logically (or socio-logically) integrate new cultural systems to guide action is a deviation from ''cognitive optimality'' and ''satisficing'' and is thus *cognitively costly* (Whitehouse, 2004; Lanman, 2007). This means that the development of new ideological systems are expected to require specially demanding (in terms of resources, organization and set-up costs) representational and mnemonic resources beyond those usually considered, especially in terms of the storage, transmission and reproduction of cultural information. Second, it is unlikely that during these ''high-ideology'' periods action is actually ''driven'' by these explicit cultural systems. Instead, we should expect, everybody but a few intellectual or cultural elites to still attempt to impose old practices, skills and habits even in contexts where they no longer apply, at the same time as there appears to be a virtual explosion of new models and discursive expression of ways of organizing life.

In addition, the motivation to develop, search for or adopt new explicit ideologies to organize action can only come after a period in which old, practical strategies of action are applied in the context of dissolving objectified support for them and the person records a series of violations of expectations for the future. Toolkit theory predicts that those individuals subject to a chronic state of ''unsettledness'' will be more likely to evince a demand for explicit cultural systems (or intellectualized cultural products) to guide their action. Not all forms of lack of external support will produce this demand, but only the ones that produce chronic, sustained disconfirmations of practical anticipations embodied in habitus, in the context of rapidly changing external supports for action (Bourdieu, 1988:167). When this happens persons will engage in a reflexive search for explanatory schemes at the level of discursive consciousness and will be more open to the type of temporary high-cognitive organization of belief systems that are observed in contexts with ill-defined external guidance for action. Thus, counter-ideological movements emerge in the wake of disappointed practical expectations and in the context of limited scaffolded support for action.

4.2.4. Late (after reflexive recognition): practical consciousness

Neither extant practice nor toolkit theories fully theorize the process of rehabituation or embodied reskilling at the level of practical consciousness in the context of newly established externalized scaffolding for action. What is required is a sociological theory of ''automatization''

that incorporates insights from the cognitive psychology of skill acquisition (e.g. Logan, 1988). During ''unsettled'' periods we should therefore see attempts to re-embody these new explicit cultural models back into some sort of established set of rituals and routines. Thus, in addition to explicit ''ideological'' expression, we should find periods of limited externalized scaffolding to be characterized by renewed attempts to establish frequent, repetitive, high-constraint ritual practices that are seen as the ''logical'' behavioral implications of the explicit, logically integrated, emerging patterns of (political, religious, social, scientific) doctrine (Whitehouse, 2004). This is consistent with Logan's (1988:492) claim that ''automaticity is acquired only in consistent task environments, as when stimuli are mapped consistently onto the same responses throughout practice.'' In these contexts, we should observe rule-based, consciously monitored schematic-transfers of explicitly organized cultural models for organizing action from domain to another (Sewell, 1992), being forced to become—through enforced repetitive practice—''locked in'' into practical behavior patterns embedded in ritual practices.

Practice theory leads to another key observation in this respect: not all actors will be equally able to adapt to newer externalized cultural scaffoldings for action to the same degree. Readaptation and the acquisition of novel practical skills favors younger actors (who did not have time to invest a lot in older ways of organizing action) and penalizes those who came of age under older institutional structures. Thus, all periods of dissolution of external support for action and the reconstitution of new ones separates actors into *institutional generations*, at the level of practical consciousness, even if some sort of homogeneity at the level of discursive consciousness (explicit institutionalization) is achieved. This separates the (institutionally) ''old'' who have less of a capacity to retool and relearn new habits from the (institutionally) ''young'' who are able to reconvert (through skill transfer) not yet crystallized practical investments into new patterns of habitualized expertise to generate and organize action under currently developing external supports.

5. Conclusion

In this paper we have attempted to explicitly characterize as cognitive theories two major contemporary approaches to culture and cognition in cultural sociology. The analysis shows that what we have labeled ''toolkit theory'' and ''strong practice theory'' perspectives share major points of conceptual convergence, but also display consequential differences in explanatory scope and empirical focus. We argued that the ''toolkit'' critique of the (sociological) functionalist theory of cultural and cognition inherited from the Parsonian tradition converges almost point by point with the recent critique of (cognitivist) functionalism by embodied and embedded approaches to cognition in cognitive science and artificial intelligence (a more extensive analysis would have shown a triple convergence, as Bourdieu's critique of classic Lévi-Straussian structuralism can be thought of in analogous terms). In particular both critiques agree on the view that cognitive theories that input too much internal structure to the social agent are likely to run into predictable explanatory difficulties. The solution is to offload a lot of the cognitive work that previous approaches inscribed in the mental makeup of the agent outside towards the world of institutions and external structure afforded and provided by the environment in which the actor is embedded (Clark, 1997; Brooks, 1997[1991]; Swidler, 2000, 2003).

Explicitly outlining the cognitive underpinnings of the practice and toolkit perspectives clearly shows that the two theories can be thought of as complementary in terms of their explanatory ambitions. Rather than forcing a spurious analytic choice between the two, we have endeavored to clarify and explicitly characterize in what modal contexts taking a toolkit or

practice approach makes more sense. We find worthy of note however, that while the toolkit approach prefers to be agnostic as to the specific conceptualization of the cognitive architecture of the actor, practice theory provides a more explicit formulation in this regard. We find the latter approach more productive than the anti-representational agnosticism of the toolkit perspective. We find it even more encouraging that the practice-theoretical cognitive model of the social agent converges with recent emphases on the radical embodiment of cognition in cognitive science, as well as with the now overwhelming empirically supported call for a ''dual systems'' approach to mental functioning in cognitive psychology and cognitive neuroscience. We believe that rather than being agnostic, a more thorough commitment to explicitly formulating a cognitive model of the agent—referenced by the ''theory of culture'' employed by cultural sociologists—makes for stronger theorizing in the field.

The key point to keep in mind is that theoretical commitments that impinge on the nature of the actor within a theory of culture are not optional. When not explicitly stated, they remain in the background and affect the viability of the particular theory of culture and cognition at hand (Bloch, 1986, 1991; Carley, 1989; DiMaggio, 1997). We attempted to show the analytic advantages of this theoretical strategy by outlining the theoretical expectations to be derived from a model that combines the insights of the two approaches in the context of some typical configurations of the external institutional environment (featuring both episodes of institutional ''stasis'' as well as episodes of institutional ''change'' and transformation). We hope that this exercise has advanced some productive insights into the dynamic linkage between culture, cognition and institutions in cultural sociology.

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