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Is the unconscious "smart," or "dumb?"
and if it's smart, how smart is it?:
one more time—with feeling

Abstract

Empirical, conceptual, and methodological issues involved in assessing the analytical power of unconscious processes are examined in light of reviews asking the question: Is the unconscious smart or dumb? It is suggested that among many theoretical differences, the discrepancy between what may be characterized as a more molar approach using everyday and clinical type phenomena on the one hand, and a more cognitive science, molecular approach using simple memorial and perceptual stimuli and stringent laboratory procedures on the other, lead to different answers to the question. Those advocating a more molar approach emphasize the importance of knowledgebase, affective and personally meaningful stimuli presented with longer exposure times, all of which enable a more appropriate cognitive encoding process, leading to different findings bearing on the question. A specifically developed cognitive and linguistic nonmetric methodology that incorporates affective, personally meaningful stimuli in realtime durations are presented. Findings suggest that the analytic power of what are called unconscious processes is more sophisticated than previous molecular and laboratory research has indicated, though not as sophisticated as some claim, and calls for further research using this methodology to shed new light on the question, Is the unconscious smart or dumb?

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Introduction

For cognitive scientists, there perhaps have been few other phenomena that have raised as much controversy as the concept of an unconscious mind. Indeed, until recently, when most cognitive researchers addressed the concept of an *unconscious mind,* the term *nonconscious processing* was typically used to gain distance from questionable claims historically made by many psychoanalytic and psychodynamic theorists. Attempts to bring psychodynamic and cognitive science formulations of an unconscious into alignment have existed almost from the inception of Freudian theory and continue, to one degree or another, in contemporary cognitive science. At least since the 1950's, with the classic work of Dollard and Miller (1950), ongoing experimental studies on a myriad of hypothesized psychodynamic functions have been conducted, but not without considerable controversy.

In recent years, the controversy over unconscious functions has engendered a number of books, (e.g., Bowers & Meichenbaum, 1984; Dixon; 1981; Erdelyi; 1985; Shevrin, et al. 1996), reviews (e.g., Erdelyi, 1984; Greenwald, 1996; Kihlstrom, 1984; Shevrin and Dickman, 1980) and special issues of journals devoted to the controversy (e.g., *The American Psychologist,* 1992; The *Journal of Personality,* 1994).While cognitive science research on unconscious processing is now nearly routine (Greenwald, 1992; Kihlstrom, Bamhardt and Tataryn, 1992; Loftus and Klinger, 1992) with the term unconscious and research into unconscious processes now increasingly respectable among cognitive scientists, it nevertheless is not research that most psychodynamic clinicians, let along psychoanalysts, would consider "friendly." Though the controversy is no longer about whether unconscious processes exist, there continues to be wide disagreement about how "psychodynamic" or analytically sophisticated unconscious processes are. This led Greenwald (1992) in his review of the research to ask "How smart is unconscious cognition? Compared with conscious cognition, is it smart or dumb?" This is not only a controversy that will not go away, it has not made much progress in conflict resolution, with each side holding fast to their position by clutching firmly to their experimental findings (methodologically inadequate clinical claims are, of course, not pertinent). Before Greenwald's question can be answered, however, it is necessary-to establish what is meant by "smart" and "dumb," as well as what is meant by the term unconscious.

Levels of unconscious processing

Loftus and Klinger (1992) address this issue by exploring what might constitute a "smart" unconscious. Adapting and extending their initial formulation, for purposes of this article what might be considered smart can be categorized into

six levels of unconscious functioning. From a cognitive science perspective, few would argue that unconscious activities include automatic processing like the recognition and classification of patterns lines, angles, and tracking co-variations in the environment as well as the automatic implementation of once consciously learned routines and procedural tasks. These types of unconscious process will here be characterized as f/nc,. *Unc,* constitutes the semantic analysis of individual words. Unc_f involves propositional analysis and related higher order meaning contained in phrases and sentences. Unc_4 is the ability to deal conceptually with novel situations and with an unconscious that operates from a motivational/ volitional base. Unc_1 involves the "knowing" how to protect the conscious mind, using the various defense mechanisms like denial, projection, displacement, etc. Finally—and by far the most controversial is Unc_6, with kind wide—ranging "wisdom."

As indicted above, while unconscious processes are now generally accepted in cognitive science research, Greenwald and others (Greenwald, 1992; Kihlstrom, Barnhardt and Tataryn, 1992; Loftus and Klinger, 1992) suggest that the unconscious is nevertheless not very smart. Historically, the cognitive science answer to Greenwald's question was that the unconscious is in fact quite dumb, possessing essentially only The, type processing. More recently, perhaps most cognitive scientists acknowledge that unconscious functions include Unc_2 processes. Some, however, acknowledge Unc_1 and Unc_4 type processes. Those who accept *Unc* base their view on controlled research into hypnotic, amnestic and other similar data (see below). Unc_5 is still largely hypothesized only by those with a psychoanalytic orientation, with Unc_6 belonging to only a small subset within psychoanalysis.

Generalizing Greenwald's (1992) conclusion from his extensive review of the rigorous research indicates that though unconscious memory and perception of stimuli and their processing are reasonably established (a) its analytical power is of a very low order, (b) it is at best capable of the semantic analysis of only single-words, and (c) there remains insufficient evidence that multiword strings and other similarly complex patterns can be meaningfully analyzed. Bruner (1992), too, suggests that the answer to Greenwald's questions lingers in the neighborhood of 'not very' smart (p. 782). Despite his conclusions, Greenwald does suggests that "it is important not to belittle the significance of the unconscious cognition that has been demonstrated" (p. 773). Nevertheless, he notes that the evidence "severely calls into question the psychoanalytic conception in which unconscious cognition matches or exceeds the cognitive sophistication of conscious cognition" (p. 773). Other researchers, however, like Bargh and Bamdollar, (1995), Jackendoff (1999), Kihlstrom (1987), Kihlstrom, Barnhardt and Tataryn (1992), Merikle and Daneman (1996), Reber (1993, and Allen, R. & Reber, 1998) tentatively suggest that under certain methodological and moti-

vational conditions (e.g., automatic activation of unconscious goals, hypnosis, implicit learning) the unconscious can be fairly intelligent. So, again, just how smart is it—really? It will be suggested here that the answer (or answers) depends on a number of unresolved issues, both conceptual and methodological.

Three approaches to levels of unconscious processing

In characterizing this controversy, there seems to be three different approaches. At one end of a continuum, there is the traditional cognitive science approach that has tended to research ostensibly pure and more molecular cognitive processes like selective attention to simple stimuli, unconscious learning, encoding of algorithmic covariations or patterns, implicit memory, and subliminal perception (as opposed to subliminal activation) that includes only Unc_t and Unc_2. At the other end, is the psychoanalytic approach that tends to use more molar clinical phenomena such as defense mechanisms, and subliminal activation of psychodynamic processes (see below), that includes Vnc_1 Unc_4 Unc_s(e.g., Bucci, 1997; Ederlyi, 1979; Shevrin, 1986; Silverman and Weinberger, 1985), and more rarely Unc_6 by a small subset of psychoanalysts (e.g., Langs, 1978).

In the middle of these two approaches is a third view which is more difficult to clearly label. For lack of a better term this third approach will be called the cognitive psychodynamic approach (see below) in that it is interested in Unc_1 and perhaps Unc_4 processes. While assuming unconsciously motivated processes, the term cognitive psychodynamics used here is not based in any particular "psychodynamic" theory.[*] [1] Research reflecting this third approach is exemplified by Bowers and Meichenbaum (1984), Kihlstrom (1987), Kihlstrom, Bamhardt and Tataryn, 1992). Merikle and Daneman, 1996) and others who draw from phenomena

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[1] To demonstrate the reflex reaction and depth of defensiveness of many computational cognitive researchers to the term psychodynamics, a (signed) reviewer of an earlier draft of this paper whose research I cited, wrote "I absolutely deny that I am interested in a *psychodynamic* approach to the unconscious, as attributed to me on pp. 4-5. The very fact that the author can make this statement makes me wonder how carefully he has read the work he purports to be summarizing, the I adopt a wider range of unconscious processes than Greenwald doesn't mean that 1 am a *closet Freudiari"[\\.a\]<x* added], I should note that I took great care not to imply that he was "Freudian." In referring to his approach. I said, *"For lack of a better term* this third approach will be called the psychodynamic approach." In my work I have always been meticulously careful to show that it evolved out of and remains within a cognitive and psycho-linguistic framework. To rephrase the term psychodynamic into "unconsciously motivated cognitive operations" seems awkward, so here I coin the phrase "cognitive psychodynamics." That researchers keep reading "Freud" into any system even hinting at unconscious meaning is unfortunate. At the risk of sounding ad hominem ,it seems the term psychodynamic is a "prime" for automatically activating a Freudian schema.

like dissociation, perceptual defense, recovery of memories from surgical anesthesia, hypnosis, amnesia, functional blindness, and the "hidden observer" phenomenon, Hilgard (1977). As Kihlstrom, Bamhardt and Tataryn (1992) suggest, these unconscious influences may be quite different from those observed in subliminal perception (to take one example), for the simple reason that the events in question, although inaccessible to phenomenal awareness, may nonetheless be subject to quite complex cognitive processing. The sheer diversity of the available evidence for unconscious perception, memory, thought, and learning, is important precisely because an appreciation of *the full span of the psychological unconscious may provide an additional perspective on the matter of the analytic power of unconscious processes"* (italics added, p. 789).

This cognitive psychodynamic approach highlights the problem not only of if, and how, relatively smart unconscious processes are but an equally important problem revolving around specific phenomena like dissociation, perceptual defense, recovery of memories from surgical anesthesia, hypnosis, amnesia, functional blindness, and the hidden observer phenomena. Unfortunately these cognitive psychodynamic processes tend to be generally viewed as based in psychoanalytic theory. Accordingly, these processes seem to cause considerable reaction from more traditional cognitive science concerned with laboratory models of such phenomena or parts of such phenomena. An exact definition of what psychoanalytic means, notwithstanding, while most all of what is psychoanalytic is psychodynamic, not all that is psychodynamic is psychoanalytic (hence the extended term "cognitive psychodynamics"). The notion of a psychodynamic unconscious was around before Freud (see, Ellenberger, 1970, Whyte, 1978) despite widespread popular and professional misconceptions.

Issues influencing findings of how smart the unconscious is or is not

Contributing to many of the disparate answers and controversies revolving around the question of how smart the unconscious is, there are a number of unresolved conceptual and methodological issues, some of which are related. Overarching these issues of what kind of variables are viewed as important—and complicating matters still further—are differences in the design and rigor of the methodologies used, e.g., clinical v. laboratory, micro v macro, and in vivo v. in vitro.

Perhaps the most basic and primary problem is the very concept of the unconscious itself (See, Cheesman and Merikle, 1986). Strangely, the concept frequently seems to be used as a primitive term. For example, is the unconscious defined largely by neurological circuitry which analyzes lines and angles in the err- ronment and thus a set of structures and/or physiochemical processes that

control automatic primitive perceptual, cognitive and sensory functions, and thus only a set of *Unc.* processes? Or is it linguistically competent but only in terms of simple semantics and thus, *Unc$_r$* Or is it a more extensive a set of logico- grammatical functions and network constituting *Unc$_3$* and *Uncfl* Or is it a conceptualizing and thinking unconscious constituting *Unc$_5$* and perhaps *Uncfl* Then, of course, there is supraliminal but consciously unattended stimuli as, for example, in dichotic listening experiments that operationally gives a different meaning to what we call "unconscious."

There thus seems to be different kinds, types, and levels of "unconscious" states with each corresponding to a different set of processes and levels of analytical power. So "unconscious" is variably defined by all these states Differentiating these levels of unconscious processing is an operational matter, indeed as is typically done, *de facto,* by the particular variable and method used in any given piece of research. Ultimately, of course, the various unconscious processes must be identified—as some are already— with their neurological substrates as Kissin (1986) and other neuroscientists have and continue to outline (see Nersessian and Solms, 1999).

In any event, based on the studies Greenwald selected and categorized, his review in effect operationally defines multiple conceptions of unconscious processing. As already noted, the research is not always explicitly clear or consistent on exactly what constitutes unconscious processing. Herein, again, lies part of the problem in precisely answering Greenwald's question, Is the unconscious smart or dumb? Accordingly, different research conclusions about the unconscious in large measure (though not exclusively) derive from the different levels of analysis, variables, and methodological designs used, and in this sense answers to Greenwald's question are artifactual. Recall in this regard the well-worn classic example from physics, where depending on the experimental technique used, light is said to function as either a particle or a wave).

While most research findings are methodologically artifactual and state- dependent, conclusions often have the character of what might be called the "Church effect." Church (1961) pointed out years ago that psychologists have a tendency to assign organisms laboratory tasks which artificially limit the range of the organism's natural repertoire of functions, thus limiting observations to that restricted portion of behavior, and then on the basis of what are in effect artifactual outcomes "draw sweeping conclusions" about the organism's capacity (p. 117).

Significant variables

More importantly, in critiques of the literature there are three significant variables that are often not taken into account in laboratory models of phenomena that spontaneously occur in natural settings. *First,* an important variable in determining

whether a stimulus is adequately processed is the length of time subjects are exposed to a task or stimulus (Merikle, 1998; Seamon, Marsh and Brody, 1984).

Second, is the variable of whether stimuli are meaningful to a subject (Haskell, 1986a, 1986b; Merikle, 1998). It has been known for some time, for example, from dichotic listening experiments (Kimura, 1967) that meaningful content is presented to the unattended that the content ear will break through into consciousness. Similarly, a review by Johnston and Dark (1986) on selective attention also has shown that a semantic analysis of words presented in a secondary channel only occurs if the words have significant relevance to the subject. There is also research on memory under general anaesthesia (e.g., Andrade, 1995; Bennett, 1993; Bonebakker, et al., 1996; Kihlstrom, and Couture, 1992; Kihlstrom and Schacter, 1990; Kihlstrom, Schacter, Cork, Hurt and Behr, 1990; Merikle and Daneman, 1996) with some suggesting that only personally meaningful events heard in the operating room while a patient is under general anaesthesia are able under certain conditions to be later recalled (Andrade, 1995).

In this regard, the experimental findings on the volitional basis of so-called slips-of-the-tongue are suggestive. Although virtually all cognitive scientists and linguists, with few exceptions (e.g., Baars, 1992, Jackendoff, 1999) explain slips-of-the-tongue as simple processing "errors" Baars (1992) experimental research suggests that the possibility of unconscious meaning remains open. Further, Baars and others (Baars, 1992; Stemberger, 1992; Sellen, and Norman, 1992) suggest that current experimental conditions may not be adequate to replicate such (unconsciously) motivated slips that occur spontaneously in everyday situations.

The *third* variable related to personally meaningful stimuli that seems to influence whether unconscious stimuli are sufficiently encoded to unconsciously effect memory and behavior in ways that are "smart" is the affective aspect of stimuli, what Abelson, (1963) in another context termed "hot cognition." The role of emotion in cognition has itself been hotly debated (Bruner and Postman, 1947). Lazarus, 1991; Lazarus, 1982; Murphy and Zajonc, 199; Niedenthal, 1990), With regard to this variable, the question is, is cognition hot, i.e., influenced by affect, or is it cold, i.e., simply computational? In recent years the role of emotion in cognition is coming to be seen as integral (e.g., Damasio, 1995, Kitayama, 1990; Kostandov, 1985).

It is well established (e.g., Singley and Anderson, 1989) that the nature of the encoding process strongly influences how information can be stored and retrieved. More specific to unconscious phenomena, it has been strongly suggested (Groeger, 1988) that meaningful material is encoded quite differently than non meaningful material. As Merikle (1998) concludes on the basis of his review of the research, "the results of these experiments suggest that the way a stimulus is encoded varies depending on whether it is unconsciously or consciously perceived.

When a stimulus is unconsciously perceived, meaning or semantics is the predominant code. However, when a stimulus is consciously perceived, structural or surface characteristics become more important." What is more, Bruner (1992) uniquely argues that the magnitude of knowledge-base is also an important variable determining unconscious processing. He says,

I rather suspect that one of the reasons that experimental results in this domain have been so shaky and so hard to replicate is that we do our research on the unspecialized, the uncommitted, the very ones who, in the totally appropriate French expression, lack *une deformation professionelle* (p.782).

For some unconscious processing, knowledge-base (see Singley & Anderson, 1989) is a highly significant variable. The magnitude of one knowledge-base influences what becomes "meaningful" for an individual.

From the above brief review, one thing seems clear in the various literatures on unconscious processing. Each perspective seems intractably entrenched and welded to its particular methods and assumptions. It is also clear, however, that each offers persuasive data (at least those with fairly sophisticated controlling methods) until translated into the other methods outline above.

Toward rapproachement

In recent years the literatures attempting to convince opposing-others of their findings has become not only intractable but—quite frankly— repetitive, boring, and unproductive. Some degree of rapprochement is needed if any theoretical or applied progress is to be made.

Suggesting a rapprochement, in 1973 Piaget said, "I am persuaded that a day will come when the psychology of cognitive functions and psychoanalysis will have to fuse in a general theory which will improve both, through mutual correction" (p. 250). Making allowances for his using "psychoanalysis" (as he was speaking before a group of psychoanalysts), if the term "cognitive psychodynamics" is substituted, the spirit of his suggestion is clear. An integration must at least be attempted if a rapprochement is to occur among the many disparate research views.

Cognitive science: present and past

Using Greenwald as paradigmatic of computational and laboratory research, he concludes that, "If the evidence for cognitively sophisticated capabilities of unconscious cognition does not soon switch from being controversial to being conclusive, it will be time, at last, to abandon psychoanalytic theory's proposal

that unconscious cognition is the analytic peer (or superior) of conscious cognition" (p.770). Greenwald makes two assumptions. The first assumption he seems to make is that all (cognitive) psychodynamic research equates to psychoanalytic theory, when in fact there are other theories to explain such cognitive psychodynamics. Secondly, he says that unlike psychoanalytic research, cognitive science research has in fact adequately demonstrated that psychodynamic-like claims for sophisticated unconscious processing are not valid. Greenwald is a meticulous experimental researcher, but, like most cognitive scientists has understandably been reluctant to deviate from micro-variables and tightly controlled experimental laboratory variables . As Haskell (1986) has suggested in a similar context, it evidently—and understandably—remains a fear that if the meticulous experimental door to the unconscious is opened to other methodologies and macro variables then "all manner of Freudian specters will be let loose in the cognitive laboratories" (p.149).

In answering Greenwald's question, is the unconscious smart or dumb, it is perhaps time to seriously consider what Norman (1980) and others have been suggesting for some years: that "cognitive scientists as a whole ought to make more use of evidence from...cognitive sociology, and anthropology and from clinical studies of the human. These must be accompanied, of course, with the study of language" (p.l). In this regard, Martindale (1981) has further suggested that "a viable science of cognition cannot restrict itself to explaining the mental activities of waking rational subjects in psychological laboratories.... we need mental activity in all its forms," including the „irrational thought of the poet" (p. viii). More recently, Gardner (1985) has asked "whether various forms of human irrationality -those documented by clinicians... or by anthropologists... can be elucidated by the methods of cognitive science" (p. 380). Baars (1986), too, has noted that cognitive psychology must incorporate "feeling [and] imagination" (p. 411) into it research. Recently, Bruner (1990) noted that "The cognitive revolution as originally conceived virtually required that psychology join forces with anthropology and linguistics, philosophy and history, even with the discipline of law" (p.3). While in many cases cognitive science has addressed some of these areas, it has largely done so —as indicted above—with an approach that is not always congruent with the nature of the phenomena in these areas.

Unconscious processing as default position

Methodological issues, notwithstanding, it might be asked why computational and experimental cognitive psychology —and indeed Western thought—has been so resistant to accepting unconscious thought? As many have pointed out (e.g., Haskell, 1987b, 1999a, Reber, 1993), the answer seems to lay in the assumption that logical,

rational, "conscious" thought is the primary mode of thought. It is well-known that this is in large measure the legacy of Descartes philosophy. In addition, coupled with this assumption is the fact at least for Western peoples ones personal identity is inextricably linked to conscious thought. Thus any concession to unconscious cognitive processes and therefore to what has been considered irrational undermines the very notion of personal autonomy and rationality. This equating of thought only with consciousness is, of course, a phenomenological concept and common sense folk psychology "theory." As Haskell (1987b) has suggested, "It is thus ironic that cognitive science, whose goal it is to separate itself from common sense, should find itself founded on it" (p. 90).

Some researchers outside computational cognitive science accept either that the more elemental aspects of higher order conscious thought, or all of some thought, is unconscious. For example, Piaget (1973). Werner and Kaplan (1963), too, as well as others, have suggested that much of the work of conscious thought is unconscious. Even Louis Thurstone (1926) one of the founders of the field of psychometrics in his foundational work on *The Nature of Intelligence,* describes a "pre-cognitive" stage on a cognitive-sensory matrix where a "motive" which is affective and sensory selects "certain topics and discourages others" (p. 63). Thus, for Thurstone there is "thought" occurring on a non-conscious level, a psychodynamic thought that is both cognitive and affective and particularized. As it moves toward consciousness, thought becomes more universal or abstract, detached from its earlier complexes. Through what Thurstone terms a "pre-focal" stage, conscious thought is rendered rational and conceptual. Haskell (1989) has also outline a developmental perspective for conscious level processing. Some have used research on vision as an analogy. It is well-known that before the conscious experience of seeing is possible, multiple neurological (unconscious) layers of processing must be first be completed and integrated.

While a number of researchers have implied that all higher level thought is initially and primarily unconscious in origin, few have been so bold as to clearly assert this position. Velmans (1991), however, has suggested that all conscious thought is unconsciously generated. Moreover, based on his research on implicit learning, Reber (1993), a cognitive scientist, has recently—albeit— cautiously suggested that the unconscious mode is the "default" or primary mode, not consciousness. To explain how the unconscious as "default" mode can be most succinctly conceptualized Haskell has for some time taken the computational/artificial intelligence analogy of the brain/mind-as-computer to its logical conclusion by using the analogy that the conscious mind is analogous to the monitor screen, with the unconscious analogous to the underlying programing. In short, nothing appears on the computer screen (consciousness) that has not previously been constructed and processed in the underlying programing (unconscious).

So, if either because of the above discussed methodological issues and variables or because of varying theoretical parameters, both the extremes of the continuum with psychoanalytic research at one end and the cognitive science corpus at the other has not yielded persuasive evidence to put the question of whether the unconscious is smart or dumb to rest, where are researchers to look? What might a non psychoanalytic but, nevertheless, really smart, i.e., a cognitive psychodynamic and affective unconscious look like, where might we find it, and how would we know it, methodologically, if we saw it? While social psychology has always flirted with the notion of the unconscious—now often referred to as "automatic activation processing"—there seems to be increased interest (See Devine, 1989; Niedenthal, 1990; Bargh, 1992; Neuberg, 1988; Krosnick, Betz, Jussim and Lynn, 1992; Lewicki, 1986; Lewicki and Hill, 1987; Bargh and Pietromonaco, 1982). But there has been little interest in the cognitive aspects of verbal narrative analysis.

In calling for the study of everyday language, Bruner (1990) emphases that he has taken "great pains to argue... that one of the most ubiquitous and powerful discourse forms in human communication is *narrative"* (p. 77). One place where no computational cognitive scientist has gone before is the small group dynamics laboratory for the cognitive and psycho-linguistic analysis of verbal narrative data.

Cognitive and psycho-linguistic operations in narrative analysis

There has existed for sometime now a body of research that because of historical, disciplinary, and methodological contingencies has not been linked to cognitive science, nor to the question of whether the unconscious is smart or dumb. Until recently, this research has historically not been subjected to a rigorous methodology (Haskell, 1991). The phenomena in question are verbal narratives that appear to be unconscious recognition and responses to personal, social, and physical stimuli within the narrative situation.

Instead of viewing the following data analysis from standard experimental and statistical methodologies, to understand the findings it is imperative to approach the analysis as would either a linguists looking at the structure of a string of words, or a mathematician looking at a logico-mathematical group. In this regard, it should be noted that directly suggesting the validity of the method on which these findings are based, Haskell and Badalamenti (2003) have recently demonstrated that a series of similar $S_{ub}L_{jt}$ topics exhibit the structure of an algebraic group with the properties of identity, closure, reversibility, associativity, and transformation.

As noted above, historically most data ostensibly showing a very smart unconscious come from psychoanalytic research, encompassing Unc_4 (propositi-

onal analysis and related higher order meaning contained in complex sentences) and Unc_5 (the ability to deal conceptually with novel situations and possessing its own motivational/volitional base). Moreover, valid objections to the latter tend to issue from their lack of a sound methodology. The following section outlines findings from a specifically developed controlling methodology (Haskell, 1982, 1991, 2003) based on a psycho-linguistic and systemic structural analysis of transcribed narratives from a small group dynamics laboratory verbal narrative protocol. The term *structure* for purposes of this article is to be understood as a construct derived from a systemic set of operations performed on empirical data.

Overview

In group narratives where a concern of members is about an authority figure, it has sporadically been noted that there are often increased literal narratives about authority figures in relation to subordinates, e.g., references to *God/God's children, policemen/citizens, parents and children, bosses/workers.* Similarly, when a tape recorder or a one-way vision mirror is present, literal stories about CIA, FBI often occur. These have been seen as kind of metaphorical expressions, where speakers are not conscious of the "metaphors" (e.g., Fine, Pollio, and Simpkinson, 1973), expressing their unconscious affective concerns. There has been a spotted history of recognizing such semantically dual narratives. Historically, research has come out of the small group dynamics laboratories from different disciplines. Beginning with the work of Robert Bales in social psychology (1970) and others Bales and Cohen, (1979), Dunphy, (1968), Gibbard and Hartman, (1973), Hartman and Gibbard, (1974), Haskell (1978), Mann (1967), Schutz, (1971), Slater, (1966); in sociology Mills, (1964) and Morocco, (1979); in group psychotherapy, Durkin (1964), Foulkes & Anthony (1957), Mullahy (1970), Whitaker & Lieberman (1964), Yalom (1970), and other similar areas of research in communications Bormann, (1972), Farrell, (1979), Mohrmann, (1982).

Depending on the theoretical framework of the researcher, the phenomenon has been variously termed *fantasy themes, latent communication, symbolic equivalencies, collective projection, parataxic distortion,* or *analogic communication.* Such phenomena have, in varying degrees, been viewed or considered in a generalized Freudian interpretative framework, not in cognitive- linguistic terms. In addition, with the exception of Bales's (1970) devoting a chapter on general guidelines for recognizing fantasy theme analysis in his classic work and in his later symlog analysis (Bales *and* Cohen, 1979), there has been no systematic theory or methodology detailing the cognitive operations, the analysis, and the validation of what Haskell has term sub-literal ($S_{ub}L._{()}$) reports, nor their implications for cognitive science. As a consequence, SubLit reports have been intuitive and considered coincidences or simply as Freudian interpretations.

A $S_{ub}L_{it}$ report, then, is a narrative, comprised of literal topics, stories, sentences, or phrases that exhibits two levels of meaning. It can be described as a piece of metaphorical, analogical, or symbolic language with a literal level of meaning and a second level of unconsciously intended meaning, Thus such pieces of language exhibit a dual coding or double semantic structure. For example, the literal narrative about rw/ns is simultaneously a narrative whose $S_{ub}L._($ referent is to the *two* researchers in a group when the literal description of each twin in the report can be *isomophically mapped* onto characteristics of the two researchers. It is suggested that $S_{ub}L_{jt}$ semantic referents of such reports are coded and processed on a unconscious and parallel level to conscious and literal referents. That is, subjects generating reports are not aware of the dual semantic structure. Somehow the unconscious affective schemata of $S_{ub}L_{jt}$ narratives organize language selection, both grammatically and semantically, which cognitively fuse two different levels of meaning. Mapping and knowledge of the interactional setting, events, and member expectations act as general and initial contextual rules of inference.

How are such topics to be explained and validated? Two explanations immediately present themselves. First that they are simply literal topics with no further meaning, and second, that any unconscious meanings attributed to them that may be related to the interaction situation are simply coincidental. A third explanation is that such verbal reports are unconsciously meaningful. Without a controlling methodology, however, such themes may simply be coincidental analogies. Accordingly, the recognition and analysis of such discourse at best becomes omnimeaningful, and at worse sheer imagination, or serendipity.

If the initial couple of brief narrative topics above are tentatively accepted, then the question becomes what are the implication for cognitive science and for the question: how smart unconscious processes are, and if they are smart, how smart are they? With this said, a more systematic analysis of $S_{ub}L._t$ *reports* will be presented. Informed by a controlling psycho-linguistic and cognitive methodology, $S_{ub}L_{jt}$ reports become not coincidences but important veridical linguistic data for cognitive science and may be useful to psychodynamic therapy as well. Haskell (1999a, 1991, 1990 1989 1987a, 1987b, 1986, 1985, 1984, 1983, 1982) has developed a structural and linguistic controlling methodology for the analysis and validation of $S_{ub}L_{jt}$ reports comprised of an integral set of cognitive and linguistic procedures and operations.

It is important to note that in addition to resulting from a specifically developed systemic and structurally consistent set of linguistic and cognitive operations of analysis and validation procedures, similar $S_{uk}L$ *findings as those to be presented have been systematically found across multiple narrative protocols,* and thus seem clearly not to be ad hoc analyses. Although the following pieces of linguistic data were generated in a small group dynamic laboratory, it

served simply as a data-generating vehicle for the study of language and cognition. As noted above, the small group has been largely neglected as a linguistic and cognitive laboratory. While it is not possible to present the full methodology here a general framework and a few illustrative examples will suffice to suggest the existence and significance of $S_{ub}L._t$ narratives to cognitive science and to the question: How smart is the unconscious?

The term derives from a linguistic framework; it adopts the linguistic concept of phrases and sentences having dual semantic structure: a surface structure and a set of internal representations. The $S_{ub}L._($ meanings, or internal representations, are unconscious, just as the complex of grammatical rules is unconscious, yet operational, while one is speaking. To reiterate, *as used here the term unconscious refers to cognitions and schemata that are simply out of one's phenomenal consciousness in the manner of stimulus discrimination without awareness and/or to the apprehension of supraliminal but consciously unattended stimuli,* which henceforth will be primarily referred to as the cognitive unconscious (C *U*).

By way of introduction, as in the field of structural linguistics, the following sentences demonstrate deep multiple internal representations—generated from a deep structural ambiguity underlying single surface structures that offer one framework for $S_{ub}L._($ meaning:[2] For example, the following classic sentences from the field of linguistics have deep structural ambiguity.

1. *Surface structure: The shooting of the hunters bothered him.*
Representation 1: The killing of the hunters bothered him.
Representation 2: The sound of the hunters shooting their guns bothered him.

2. *Surface structure: Flying airplanes can be dangerous.*
Representation 1: Flying in airplanes can be dangerous.
Representation 2: Airplanes that are flying in the air above you can be dangerous.

The structure or internal representations of the surface structure of these classic sentences can be seen as formal cognitive equivalents to $S_{ub}L._t$ internal representations of literal (surface structure) reports suggested here. In groups

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[2] For purposes of explanation, since Chomsky's work is so well known, I am abstracting his basic notion of surface structure and deep-structure ambiguity from the rest of his increasingly controversial theory of language and syntax. Deep-structure ambiguity does not seem to be inherently dependent on his theory of syntax. The main parallel here is to underlying cognitive representational ambiguity.

concerned with a researcher taking notes and offering interpretations about the group dynamic, certain topics tend to be selected for discussion. In the interest of space, only one of these narrative topics will be analyzed here. Perhaps even to the most methodologically critical, it will come as no surprise that a topic that frequently arises when the concern is a researcher taking notes is journalists. Given that any number of journalists could be selected into the discussion, the name of a particular one becomes significant to explain. In one group, out of any number of possible journalists, the name Harry Reasoner was selected in. Psycho linguistically, and from an oral speech framework, the name Harry Reasoner has a dual or $S_{ub}L_{it}$ internal phonetic representation:

1. Surface Structure: [The journalist] *Harry Reasoner*
Representation 1: His *name* is Harry Reasoner
Representation 2: He *is* a *hairy reasoner*

The note-taking researcher is being internally represented as a bearded (i.e., hairy) reasoner. One of the cognitive operations involved here is similar to puns and slips of the tongue. The non conscious cognitive operations get still more bizarre—yet methodologically informed and consistent across multiple and different group protocols. The methodological structure, complexity and consistency suggests a reasonable level of validity (Part of establishing validity of $S_{ub}L_{it}$ narratives is similar to establishing a mathematical proof, in that internal coherence and deductive relations are consistent. Also like mathematical equations, the formulations are found to map onto external reality (e.g., exponential equations that apply to multiple phenomena).

The structure of $S_{ub}L_{it}$ analysis and validation

The following excerpts from a group narrative will illustrate the structural, cognitive, and psycho-linguistic methodology for recognizing and validating $S_{ub}L_{it}$ meaning. Similar to the/ Harry Reasoner/ example above, a group with two researcher/trainers selected in the name of another journalist, /Harry Harris/.

2. Surface Structure: [The journalist] *Harry Harris*
Representation 1: His *name* is Harry (Harris)
Representation 2: He *is hairy*

These examples can be analyzed and assessed for their validity by a multiple and structurally systemic and consistent set of interrelated cognitive operations,

(2) Syntactic ordering operations, (3) Memory Reconstructions (4), Deductive Sub-set Invariance, (5) Internal Order and Lattice structure operations.

Phonetic operations (1): Names in literal reports are often $S_{ub}L_{it}$, phonetically generated references to physical descriptions of group interactions and can be analyzed on the basis of sound relations similar to puns. The literal name */Harry/* , like the example above of *Harry Reasoner,* is a phonetic transformation referring to one of the researchers physical characteristic of being *bearded.* Thus the proper noun */Harry/,* on a $S_{ub}L_{it}$ level, functions as an adjective */hairy/.*

Phonetic operations (1.1.): Further, the last name */Harris/* is a phonetic transformation referring to one of the researchers physical characteristic of being non bearded or hairless (see Figure 1).

Syntactic ordering operations (2.): In addition to the above, the first letter of the first and last name */H/arry IHlamsI* matches the first letter of the last- names of the two researchers //7/askell and ////capes.

Syntactic ordering operations (2.1.)-. The order in which the first and last names are presented is a $S_{ub}L_{it}$ reference to the dominance or *seniority order* of two researchers. The literal name of */Harry Harris/* corresponds in the correct order to the dominant senior researcher: first, */Harry/* = hairy =the bearded *senior* researcher, then the second name */HarrisH* hairless =the beardless *junior* researcher.

Syntactic ordering operations (2.2.): The analysis and its validity is additionally and structurally suggested by other topics related to the original topic that correspond to the double */H/s* within the order-structure name */Harry Harris/.* In the same narrative the $S_{ub}L_{it}$ syntactic or order-structure is maintained in a literal transformation narrative about two newspapers, both names of which also begin with the letter */H/: /Harrisburg Independent Press (HIP)/* and the / *Harrisburg* Patriot News/.

Syntactic ordering operations (2.3.): Continuing to reflect the seniority or status order-structure, the newspaper */Harrisburg Independent Press (HIP)/* — mentioned first— references the *senior* (bearded) researcher with its acronym "HIP," which in the vernacular means liberal/avant garde or politically "left," with the */Harrisburg Patriot* News/ mentioned second in order, referencing the junior, nonbearded, i.e., more conservative = patriot, researcher (see Figure 2).

At this point it should be asked, why was the name of any other well-known journalists not selected-in? The short answer is that other initials of journals would not have fit those of both researchers. The journalist Harry Harris linguistically and structurally allowed a fuller range of affective concerns to be sub-literally expressed that would not have been expressed with other names of journalists. This analysis is powerfully indicted by the following.

Memorial Reconstructions (3.). What makes this data highly interesting is that the reference to the journalist */Harry Harris!* was in fact a "misremembered"
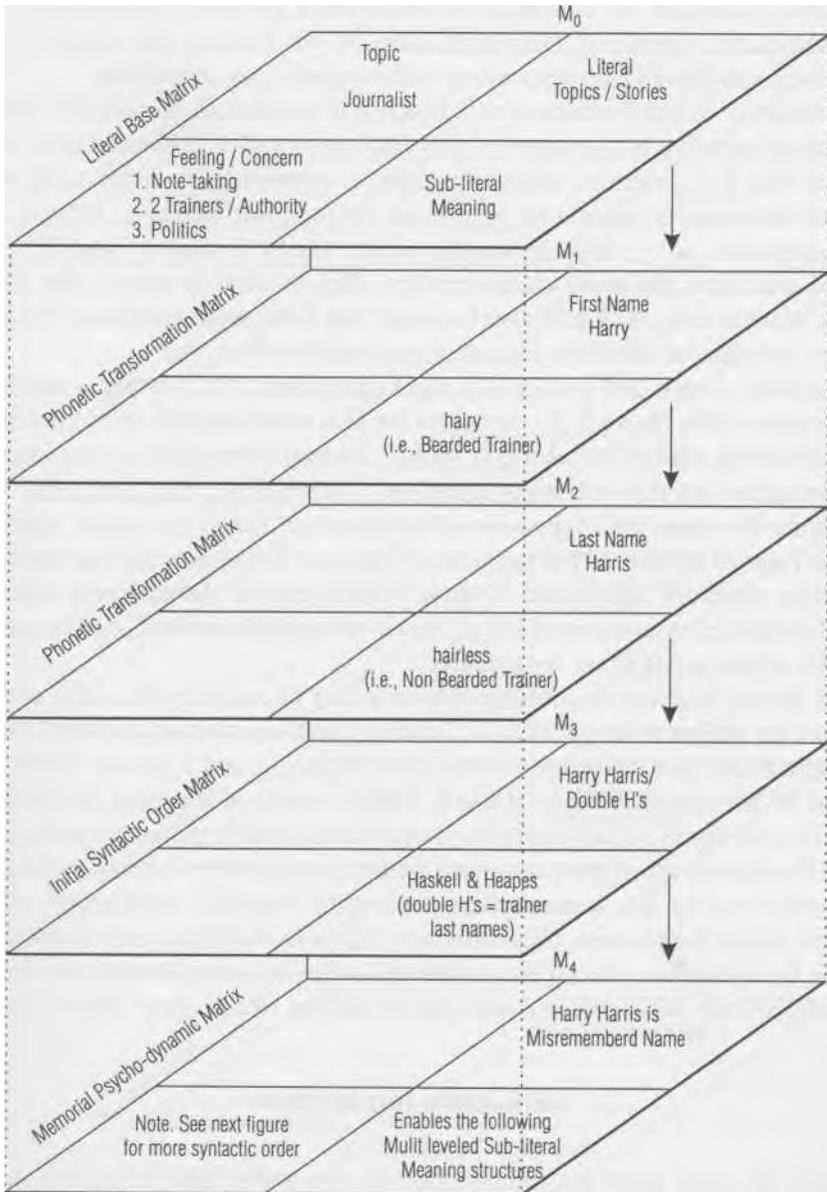
Journalist Harry Harris Matrix

Figure 1

name. The interactant later reported that the intended name was Sidney Harris. Apparent "mistakes" or memorial reconstructions are often strategic but C_{og} U_{nc} psychodynamic operations (similar to slips-of -the-tongue) that render a literal narratives sub-literally correspondent with unconscious cognitions.

Deductive Subset Invariance (42): In terms of validations procedures, logically, if a literal narrative is consistently associated with a given characteristics then it follows that $S_{ub}L_{it}$ subsets, transformations, or permutations of the topic should also be consistently associated with those vectors. For example, if topic X has characteristics $_{a\,b\,c\,d}$,, then its transfonnation topics $X^1{}_{a\,b\,c\,d}$ and $X^2{}_{a\,b\,c\,d}$. should also have the same characteristics. This is what is seen in the above / *Harry Harris/* data. It should also be noted that there were additional *Deductive Subset Invariances* involved that were not included here.

Internal Order and Lattice structure operations (5.): Further, validity and falsification of the above $S_{ub}L_{it}$ narratives are also established by operations similar to establishing mathematical proof; that is, internal isomorphic correspondences are deductive or derived transformations, correlations, and relations, which constitute the structure of an *ordered series* or set based on certain operations and on rules of inference. For purposes of analysis and understanding the internal cognitive structure manifested in these verbal reports, the different aspects of literal narratives from which the $S_{ub}L_{it.}$ levels are partially derived, can be assigned to cells within a cognitive base matrix.

A lattice structure is constituted by a series of matrices, the cells of which contain the different levels of $S_{ub}L_{it}$ material that isomorphically correspond to the cells in the generative base matrix (see Figures 1 and 2 above). Each tier is a kind of harmonic-like (see Haskell, 1984) variant of the base literal matrix. Based on the report of the journalist /Harry Harris/ cells in the base matrix include the different aspects of the journalism theme, such as the two news-papers; cells in another matrix the semantic transformation bearded/ nonbearded; cells in another matrix the phonetic transformation */hairy/* to */hairless/,* cells in yet another matrix the syntactic order of the double /H/'s that reference the two newspapers, the */Harrisburg Independent Press (HIP)* and the */Harrisburg Patriot News/.*

Immediate implications

Perhaps the most interesting implication for the above analysis is that in order for this series of consistent, structurally integral, and logically coherent narrative topics to occur, the primary or literal base narrative and its consistently corresponding transformations and permutations, along with their consistently corresponding $S_{ub}L_{it}$ meanings and structural relations *must somehow be cognitively (1) mapped, (2) tracked, and (3) stacked systemically throughout*

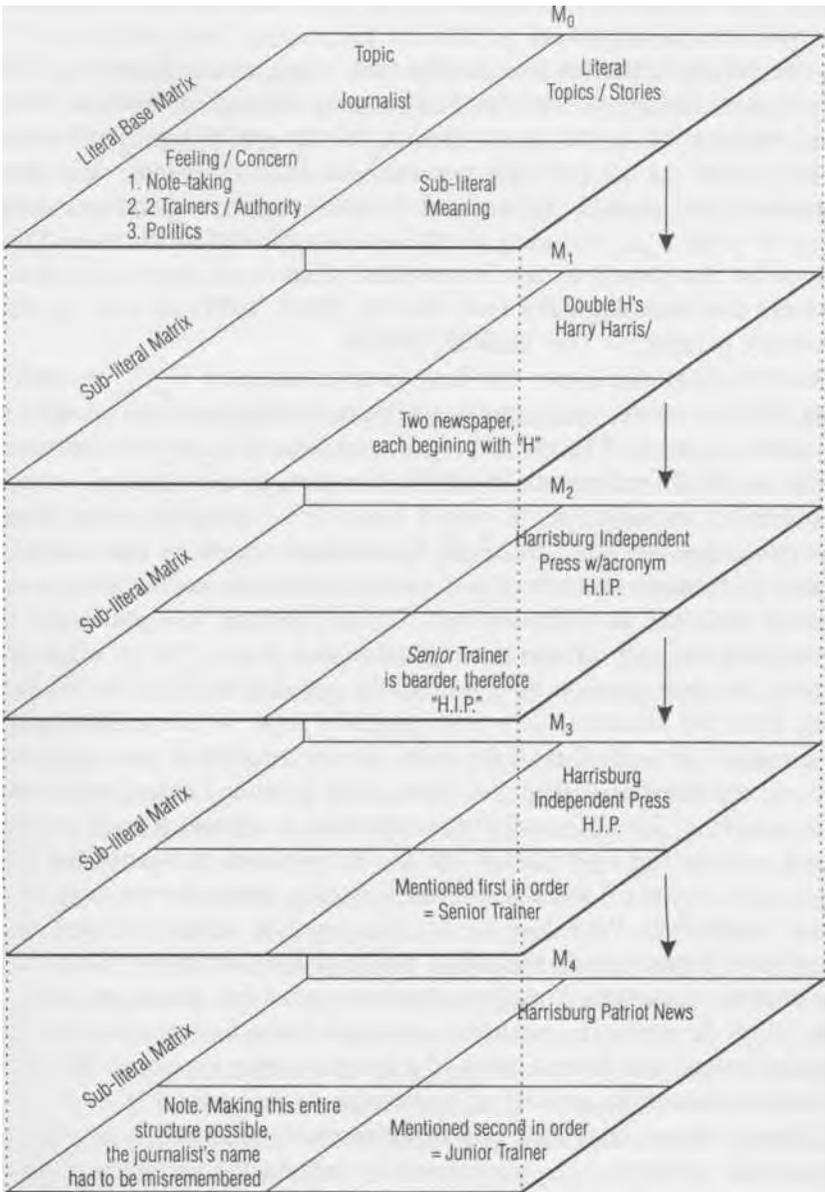Syntactic Structure Order Matrix: Journalist Harry Harris

Figure 2

multiple levels throughout the entire series in order for the various transformations and permutations to remain invariant with respect to the specific set of characteristics and operations.

A second implication is that the repeated, consistent, systemic, and integral set of cognitive and logico-mathematic structures demand explanation. That they demand explanation seems clear: Clearly, (a) the set of topics presented are empirical "facts" as are (b) their systemic structural mappings; only (c) their $S_{ub}L_{it}$ meaning and, arguably, (d) some of the novel cognitive operations perfonned on them to yield $S_{ub}L_{it}$ meaning are the consequence of abstraction. Thus the only question that should remain is how these phenomena are to explained, both cognitively and neurologically (see Haskell, 2000, 1999) as well as from an evolutionary perspective (see Haskell, 2002b).

These findings also imply that there must exists some $C_{og}U_{nc}$ executive-like process that structurally maps, tracks, stacks, and compresses the multiple levels of narrative-meaning. The stacked matrix structures illustrated above would certainly be an efficient means of information storage and retrieval.

Yet another important implication is that within psycholinguistics, discourse and narrative analysis there are seven fundamental questions which need to be addressed by research that are seldom neither asked, nor satisfactorily answered (stochastic analyses, notwithstanding). These questions are significant for an understanding not only of narrative structure and process but of language and cognition. The *first* question is: Out of all the possible topics or stories in a free flowing narrative situation, why is a particular topic or story introduced into a conversation? *Second'.* Out of the many stories selected-in to a conversation, why is one sustained and elaborated upon either by an individual or by others in the conversations? *Third'.* Out of all possible times or occasions or circumstances, why is a topic or story introduced into the conversation at a particular point in time? *Fourth'.* Out of all the possibilities, why is a particular wording, phrasing or syntax used? *Fifth'.* Why does the content, structure or plot of a topic or story match what is happening in the actual conversational situation? *Sixth'.* Why is a topic or story repetitively transformed and permuted into variations of an initial topic or story? *Seventh,* why are various internal linguistic structures and content of transformations and pennutations of a series of story variations all internally consistent and integrally parallel or isomorphic to each other?

Although these data were not experimentally elicited, it is possible to experimentally generate $S_{ub}L_{it}$ phenomena by introducing variable conditions as independent variables. A confederate, for example, can be planted in a group and instructed to act in certain ways, or affect-arousing objects or situations could be introduced (e.g., a video camera). Hypotheses can then be formulated about the type of $S_{ub}L_{it}$ topics generated (the dependent variable) in response to experimental manipulations. Using an experimental design can provide further

provide a validating set of procedures. For one of the few examples of experimental research, see Farrell, (1979) also see Horwitz and Cartwright (1952). Typically, both the dependent and independent variables in research are literal and need no analysis as to their meaning. But even with experimental and statistical designs, a specific method is required to assess and validate that the dependent variable is in fact $S_{ub}L_{it}$ In working with $S_{ub}L_{it}$ phenomena, then, the current structural methodology remains central to such research because the topics generated (dependent variable) require a method to recognize, analyze, and validate them as $S_{ub}L_{it}$ (see Haskell, 2003b).

Conclusion

Presenting the complete methodology, notwithstanding, the above findings seem to demonstrate $C_{og}U_{nc}$ (a) understanding of complex semantic processes, (b) recognition and analysis of social stimuli, and (c) semantic responses to both of the above that (d) seems to evidence $C_{og}U_{nc}$ thought processes involving the sophisticated use of phonetic relations, syntactic ordering operations as well as strategic memorial reconstructions, indicating a sophisticated analytic power. In short, these cognitive and psycholinguistic operations would seem to indicate a fairly smart $C_{og}U_{nc}$. At the very least, the findings suggest that the initial assessment of their veridicality is sufficient to warrant further research by cognitive science.

It seems reasonably clear, too, that these narratives (a) emanate from a psycholinguistic, cognitive, and affective matrix involving (b) personally meaningful stimuli that are (c) encoded quite differently than are typical stimuli used in laboratory experiments, (d) are motivated, and (e) intentionality alter (i.e., reconstruct) memorial processes (false memories). Many of the cognitive operations exhibited by $S_{ub}L_{it}$ reports, i.e., phonetic and syntactic ordering operations, memorial reconstructions, internal ordering and lattice structure operations, resonance, sociometric, and dimensional tracking of deductive subsets of narrative material, are novel cognitive mechanisms and suggest $C_{og}U_{nc}$ process heretofore unrecognized. However these cognitive operations may eventually be explained, the implications for cognitive research in general would seem robust.

Conceptually, the cognitive operations suggested bear directly on many other areas of research as exemplified by story grammar, cognitive schemata, and narrative analysis (Bruner, 1990; Thomdyke, *1977;* Thondyke *and* Hayes-Roth, 1979; Winograd, *1977,* categorization (Rosch *and* Mervis, 1975); similarity relations (Medin, Goldstone, *and* Gentner, 1990; Shannon, 1988; Shepard, 1987); speech errors (Fromkin, 1973); motivated action slips (Norman, 1981); analogical reasoning (Gick *and* Holyoak, 1983; Haskell, 2002; Holyoak, 1985; Rumelhart,

1975; Rumelhart *and* Norman, 1981; Vosniadou *and* Ortony, 1989); structure mapping (Gentner, 1983); metaphor comprehension (Haskell, 2001; Honeck *and* Hoffman, 1980; Lakoff, and Johnson, 1980); isomorphic relations (Hayes W Simon, 1977); and unconscious and parallel processing (Bowers *and* Meichenbaum, 1984; Dixon, 1981; Hilgard, 1977; Marcel, 1983a, 1983b; Piaget, 1973), and Freudian slip type of phenomena (Baars, Cohen, Bower, and Berry, 1992), structuralist approaches (Riegel and Rosenwald,1975; Levi-Strauss, 1963), priming effects (e.g., Draine & Greenwald, 1998), and transfer of learning (Haskell, 2000).

The function of similarity relations and the transformations of invariance are fundamental to cognitive science (see Haskell 1989, as is the relation of language to cognitive processes. Not only do $S_{ub}L_{jt}$ narratives assume a complex use of similarity relations and invariance transforms in order to carry out isomorphic and analogic mapping of narrative transformations and their permutations, but they assume a consistent and simultaneous parallel processing and tracking of conscious and $C_{og}U_{nc}$ cognition, as well as a parallel integration of affective, cognitive, and motor processes.

As indicated at the opening, the role of affect in information processing/ computational cognitive science has had a controversial history (Abelson, 1963) Bruner and Postman, 1947). Lazarus, 1991; Lazarus, 1982; Murphy and Zajonc, 199; Niedenthal, 1990). With regard to this variable, the question is, is cognition hot, i.e., influenced by affect, or is it cold, i.e., simply computational? Along with a host of others, Piaget (1973), has commented that one of the most significant concerns of the social and behavioral sciences is "trying to characterize affective life in relation to cognitive functions [in so far as they relate to structure] and especially of defining their interrelation in the actual functioning of behavior" (p. 39). It would appear that strong affect functions as the associative link for retrieving structurally similar narratives. In recent years the role of emotion in cognition is coming to be seen as integral to cognition (e.g., Damasio, 1995, Kitayama, 1990, Rostandov, 1985).The significance of the above $S_{ub}L_{it}$ findings, however, extends this research showing that affect can serve to reconfigure on multiple levels both semantic and syntactic material.

In terms of language performance, $S_{ub}L_{it}$ narratives appear to use many of the mechanisms involved in speech errors and action slips and—contrary to much of computational cognitive science—indicate an underlying intentionality involved in at least this class of „errors" and „slips," which could provide a ground for integrating cognitive science with some long-established issues in psychodynamics. These data also suggest that an absolute literal/ figurative distinction in language is questionable, just as it is in much of poetic language. Indeed $S_{ub}L_{it}$ narratives seem to share a commonality with the study of poetic and metaphorical language (See Haskell, 2001, 1987). These findings demonstrate clearly what has been conceptualized as (Kihlstrom, 1987; Piaget, 1973) a *cognitive unconscious* and (after Piaget, 1973) an *affective unconscious.*

Within a subset of the so-called "automatic activation processing" literature (a.k.a. unconscious processing) mentioned at the opening, there is research on unconscious racial stereotypes which, in addition to priming and other methods mentioned above, can be see as providing a partial basis for $S_{ub}L_{it}$ narratives, both in general and specifically in terms of $S_{ub}L_{it}$ racial narratives (e.g., Bargh, and Bamdollar,1995; Bargh and Pietromonaco, 1982; Devine, 1989; Vanman, Paul, Ito & Miller, 1997; Wittenbrink, Judd, and Park,1997).[3]

Finally, an area of significance is the research question of "ecological validity" (Neisser, 1976). The findings presented occur and are naturally generated in everyday situations as well as in the training or research setting of the small groups laboratory. Although such data are thus not typical, they nevertheless carry theoretical significance.

Postscript

One final intriguing implication of a smart C_{og} U_{nc} as derived from the $S_{ub}L_{it}$ methodology and material presented here is that there may exist therapeutic possibilities. Independently noticing rudimentary $S_{ub}L_{it}$ (type narratives in a therapy setting, Langs (1978) claims that what he terms "derivative" narratives can be used therapeutically by recognizing such unconscious communications and responding to them (see Haskell, 1999a, 1999b, see also Smith, 1991, 1999). Langs has developed a new school of psychotherapy based on his claims. If Langs is correct (and there is little rigorous research to support his claim at this point), then $S_{ub}L_{it}$ phenomena may turn out to be a valuable new approach to psychotherapy. Langs' "derivatives," however, are primitive and largely methodologically uninformed. Any system of psychotherapy, therefore, can benefit from the $S_{ub}L_{it}$ cognitive and psycho-linguistic methodology presented here, instead of relying on "intuitive" understanding of patients communications. In fact, there is no need to overlay "derivatives" with any specific therapeutic theory at all (I say this understanding quite well that all interpretation is implicitly based on some "theory" even if we are not aware of it). In any event, $S_{ub}L_{it}$ phenomena stand independently. Accordingly, if unconscious communications

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[3] As a simple illustration, in a group where one of the members was perceived as being genetically and socially as "half black and half white," the topic turned to talk of *animal pedigrees,* with an ensuing discussion of *pure strains* vs. *half breeds.* Later in the same group conversation, there was mention of the pipe tobacco called *Half and Half.* The ostensible literal topics of *animal pedigrees, pure strains* vs. *half breeds,* and of the pipe tobacco called *Half and Half* are $S_{ub}L_{it}$ automatic activation) stereotypic references to the group member who is perceived as being genetically half black and half white (see, Haskell, 1999a, 1986).

can be used therapeutically, then cognitive and psycho-linguistic research—again, independent of any theoretical psychotherapeutic overlays—needs to be conducted to further understand and develop a valid and effective therapy based on unconscious communication. Regardless of the direct therapeutic application, $S_{ub}L_{it}$ communication is currently a useful method for mental health counselors to obtain information from clients not otherwise obtainable from them.

In conclusion, while $S_{ub}L_{it}$ narratives may strain common sense and a standard understanding of language and cognition, so do many other anomalous phenomena that we yet do not understand. Further methodologies and theoretical frameworks need to be developed to expand our understanding of $S_{ub}L_{it}$ phenomena and their relationships to areas already developed in cognitive science in order to answer the question: Is the unconscious "smart," or "dumb," and if it's smart, how smart is it?

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