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The SMAART Scale: A Measure of Individuals' Automatic Access to Secondary Meanings in Polysemous Statements

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Psycholinguistic and neuropsychological research shows that individuals differ in their ability to access the multiple meanings implied by polysemous expressions. Drawing on these studies, a novel, computer-based measure of automatic access to secondary meaning (SMAART) is developed to distinguish individuals more likely to access only a single, immediately available meaning from those accessing multiple meanings. The new measure is found to be reliable and distinct from several established measures assessing higher level verbal abilities such as the verbal SAT. Several experimental studies demonstrate the scale's usefulness for predicting who is most susceptible to the priming effects of the secondary meanings contained in the polysemous headlines in consumer-oriented communications.

> *"Without the metaphor system, there could be no philosophizing, no theorizing, and little understanding of our everyday personal and social lives. But the operation of this vast system [...] is largely unconscious."*
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> (Lakoff, 1995, p. 229)

In 2005, the governor of the state of New Jersey enlisted the help of Lippincott Mercer, an image consultant firm, to create a new state slogan that would resonate better with residents and tourists. The result of the $260,000 contract was the slogan *"New Jersey: We'll Win You Over,"* expected to be applicable in various promotional campaigns (including perhaps those related to the Atlantic City gambling industry). However, it was shelved the day before it was to be officially unveiled by the New Jersey Department of Travel and Tourism because the governor felt that *We'll Win You Over* was a phrase with too many negative connotations (Kidd, 2006)—for one, it reminded him of his dating days and the rejections he failed to win over. Others may have recalled that New Jersey came out the winner when they went there to gamble. New Jersey's slogan problem shows the importance of anticipating and understanding the ways in which various individuals process language when multiple interpretations result from the same linguistic input.

Polysemous statements include metaphors, puns, analogies, and other forms of speech that have multiple interpretations. For example, the expression *Lawyers are sharks* can be understood literally as claiming that lawyers are dangerous creatures that swim in salt water, and figuratively as arguing that lawyers are aggressive individuals who prey on clients or defendants. In such metaphorical contexts, the figurative interpretation is the intended meaning, whereas the literal meaning is something of a syntactic by-product. In general terms however, one meaning is more apparent and immediately available, whereas another is somewhat "hidden" and more difficult to access. Widely used in persuasive communications, one observes polysemy in brand slogans (Michelin's statement that *You Have a lot Riding on Your Tires*), political rhetoric (President Nixon's 1969 launching of a *war on drugs*), and legal arguments (when *the defendant was caught red handed*). Despite their popularity, the communication effectiveness of polysemous statements appears to be less than expected (see Sopory & Dillard, 2002) and not always understood, as the New Jersey slogan example shows.

McQuarrie and Mick (1996) argued that accounting for and explaining individuals' responses to nonliteral

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speech in general requires a more comprehensive view of moderating variables. In these authors' view, these may include individual difference variables such as need for cognition, tolerance for ambiguity, stimulation level, or a specific propensity to respond to figurative language (also see Yarbrough, 1991). Neuropsychological data confirm the existence of individual differences in terms of metaphor comprehension. Burgess and Simpson (1988) proposed that automatic processing of ambiguous meanings occurs in both brain hemispheres, but the left hemisphere has a particularly important role in terms of controlled processing of meanings. Results of PET (positron emission tomography) studies (e.g., Jonides, Smith, Marshuetz, Koeppe, & Reuter-Lorenz, 1998) have found that the left inferior frontal gyrus is activated in verbal working memory tasks, and age-related differences in terms of verbal working memory have also been confirmed by PET research (Jonides et al., 2000). Indeed, Giora, Zaidel, Soroker, Batori, and Kasher (2000) found that patients with brain damage in the left hemisphere showed a significant negative correlation between lesions and scores on particular sarcasm and metaphor comprehension tests. However, lesions in the right hemisphere did not correlate with either test performance. Along similar lines, Ramachandran (2005) recently studied patients with left angular gyrus defects and found that, when asked to explain the deeper meaning of a series of metaphors, these patients always took the phrases literally. However, patients with lesions in different areas of the brain correctly construed the deeper meaning of these metaphors.

Understanding the fundamental sources of individual differences in figurative language comprehension is the goal of the present research. Although neuropsychological or PET techniques have identified physiological sources for figurative language processing differences, they are impractical tools for marketers who are interested in directly assessing these individual differences among consumers. To overcome this problem, we develop in this article a self-administered (computer-based) test that can assess individual differences in metaphoric language processing. This measure of automatic access to meaning (Secondary Meaning Access via the Automatic Route Test—hereinafter SMAART or SMAARTS when referring to the test score) is developed by adapting and building upon a standard sentence verification procedure (see Glucksberg, Gildea, & Bookin, 1982; McCloskey & Glucksberg, 1979). After describing the development process, the measure's usefulness is evaluated by testing its predictive accuracy regarding consumers' implicit processing of polysemous statements. Theoretical implications relative to several unsettled issues regarding how consumers extract meaning from expressions that have multiple interpretations are finally discussed. We begin by presenting the conceptual framework underlying the SMAART scale.

BACKGROUND

Human communications often rely on inferences and implications. Bransford and Franks (1971) argued that what is stored in memories of conversations or messages is the gist of what is said rather than the exact surface form. The extraction of gist seems to be automatic, allowing for the subsequent recall of semantic meaning even as the surface form quickly fades from memory. In the case of a multiple-meaning utterance, the inherent ambiguity of the expression is likely to hinder the process of appropriating a specific meaning from the communication. For example, taking marketplace rumors with a grain of salt is something most readers will figuratively undertake, although the process is unlikely to produce thirst. As both literal and figurative meanings are possible and sometimes equally fitting, consumers must go beyond ordinary language processing to comprehend polysemous phrases. Explaining how this occurs has motivated much cognitive and psycholinguistic research, although there is no agreement yet in terms of the precise processing mechanism behind the comprehension of polysemy.

Early studies of literal and figurative language processing from linguistics and cognitive psychology research postulated the priority of access to literal meanings. These "standard pragmatic models" of discourse comprehension (Giora, 1999) assumed that the initial activation of the literal is mandatory, such that individuals would always access and evaluate the literal meaning of a sentence first (Searle, 1969). However, Verbrugge (1976) claimed that it was erroneous to believe that the literal meaning is the first to be accessed merely because of its supposed cognitive simplicity, and that other factors (most importantly context) also play a role. Several researchers then proposed a "direct access" model of meaning acquisition.

Glucksberg et al. (1982) demonstrated that the comprehension of metaphors is automatic in the sense that individuals cannot ignore the figurative meanings even when directed to only evaluate the literal meanings. Thus, judging the literal truthfulness of the polysemous statement *Some surgeons are butchers* took significantly longer than the same judgment for statements that were literally true (*Some birds are eagles*) or literally false (*Some birds are apples*). Presumably, an automatic generation of the figurative meaning of the metaphoric statements and the required suppressing of their figurative but not literal truthfulness accounts for the slower response time. Glucksberg et al. (1982) further illustrated the automatic access/suppression of figurative meaning process by showing that metaphoric statements not easily recognized as having figurative meanings do not interfere in the processing of the literal meanings. Thus, judging the truthfulness of the statement *All surgeons are butchers* took significantly less time to judge as false than when the statement was *Some surgeons are butchers*. It appears that automatic access to secondary