The Utility and Ubiquity of Taboo Words

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ABSTRACT—*Taboo words are defined and sanctioned by institutions of power (e.g., religion, media), and prohibitions are reiterated in child-rearing practices. Native speakers acquire folk knowledge of taboo words, but it lacks the complexity that psychological science requires for an understanding of swearing. Misperceptions persist in psychological science and in society at large about how frequently people swear or what it means when they do. Public recordings of taboo words establish the commonplace occurrence of swearing (ubiquity), although frequency data are not always appreciated in laboratory research. A set of 10 words that has remained stable over the past 20 years accounts for 80% of public swearing. Swearing is positively correlated with extraversion and Type A hostility but negatively correlated with agreeableness, conscientiousness, religiosity, and sexual anxiety. The uniquely human facility for swearing evolved and persists because taboo words can communicate emotion information (anger, frustration) more readily than nontaboo words, allowing speakers to achieve a variety of personal and social goals with them (utility). A neuro-psycho-social framework is offered to unify taboo word research. Suggestions for future research are offered.*

Years ago, Patrick (1901) asked two simple questions: Why do we swear, and when we swear, why do we choose the words we do? Since his time, a considerable amount of scholarship has accumulated to address psychological aspects of swearing, but, lacking a unifying framework, it is scattered across scientific disciplines and throughout the subfields of psychology. Research is reviewed here in an attempt to show that swearing is a rich emotional, psychological, and sociocultural phenomenon with implications for those studying language acquisition, child rearing, gender differences, neuroscience, mental health, personality, person perception, emotion, verbal abuse, and cross-cultural differences.

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This review is organized around eight questions that are used to pique psychologists' interest in taboo words and to promote a deeper understanding of them through future research: What are taboo words and why do they exist? What motivates people to use taboo words? How often do people say taboo words, and who says them? What are the most frequently used taboo words? Does psychological science acknowledge the significance of the frequency of taboo word use? Is a folk knowledge of taboo words sufficient for psychological science? How should psychological science define language? Does psychological science even need a theory of swearing?

WHAT ARE TABOO WORDS AND WHY DO THEY EXIST?

I use the terms *taboo words* or *swear words* interchangeably to describe the lexicon of offensive emotional language. A taboo is a "ban or inhibition resulting from social custom or aversion" (*The American Heritage Dictionary of the English Language*, 2000). Taboo words are sanctioned or restricted on both institutional and individual levels under the assumption that some harm will occur if a taboo word is spoken. The exact nature of harm to befall the speaker, listener, or society has never been entirely clear (Heins, 2007; McEnery, 2006). At the institutional level, taboos on certain forms of speech arise from authorities that have the power to restrict speech and can act as arbiters of harmful speech—good examples are courts of law, religious leaders, educators, and mass media managers. Authorities who define taboo speech exercise their power to do so by policing and punishing those who violate prohibitions.

We first internalize taboos at a personal level. Indeed, we learn not to use them when we are punished by caregivers. Aversive classical conditioning is probably how words acquire their taboo status and arousing autonomic properties (Jay, 2003; Jay, King, & Duncan, 2006; Staats & Staats, 1958). Surprisingly, no one has clearly established how a child acquires word taboos. Certainly no one is born with knowledge of taboo words. It is only when we mature enough that we are aware of institutional standards. We learn about taboos through the socialization of speech practices, which creates an oral or folk knowledge of swearing etiquette. Reports that swear words occur frequently

in everyday speech are consistent with the argument (elaborated in Jay & Janschewitz, 2008) that native speakers of any culture learn when and with whom it is appropriate to use taboo words.

Taboos on language are ancient; profanity (secular irreverent speech) and blasphemy (attacks on religion) have been proscribed by religious authorities since Biblical times (Heins, 2007). More recently, 20th- and 21st-century legal decisions created taboos on speech considered obscene or indecent and speech that constitutes sexual harassment or discrimination. Why certain acts or words are defined as taboo is not always clear; for example, indecent speech (patently offensive sexual and excretory references) is an ambiguous legal concept that is misunderstood by the populace (Heins, 2007). One can offer prototypical examples of these speech categories, but their borders are ill defined, making it difficult to declare exhaustively what is taboo in universal terms.

One can discover the variety of taboo words by consulting reference works on slang or offensive speech (see Eble, 1996; Jay, 2000; Montagu, 1967; Sagarin, 1962; Spears, 1981). Word scaling and autonomic arousal studies also can successfully differentiate taboo and nontaboo words (Janschewitz, 2008; Jay, 1992, 2000). On an institutional level, one also can examine word taboos set by the media or schools (Jay, 1992). Another way to find out more information about taboo words is to locate the coprolalia (uncontrollable swearing) of Tourette's syndrome (TS) patients, who shout the most socially inappropriate words in their language. American Touretters usually shout words such as *fuck* or *motherfucker* but not *poop* (Jay, 2000). One can also observe the presence of euphemisms, which replace taboo counterparts. Euphemisms evidence the existence of problematic references to sexuality, death, illness, body products, and so forth in conversations (see Allan & Burridge, 1991). For example, in polite company people say *shoot* or *sugar* instead of *shit*. At present, we do not know if speakers achieve the same level of emotional satisfaction when they substitute a euphemism for a taboo word, nor do we know if euphemisms prime their taboo counterparts, thus undermining the reason for using them in the first place.

Although there are hundreds of taboo words and phrases, the semantic range of referents that are considered taboo is limited in scope. Taboos in English are placed primarily on sexual references (*blow job, cunt*) and on those that are considered profane or blasphemous (*goddamn, Jesus Christ*). Taboos extend to scatological referents and disgusting objects (*shit, crap, douche bag*); some animal names (*bitch, pig, ass*); ethnic–racial–gender slurs (*nigger, fag, dago*); insulting references to perceived psychological, physical, or social deviations (*retard, wimp, lard ass*); ancestral allusions (*son of a bitch, bastard*); substandard vulgar terms (*fart face, on the rag*); and offensive slang (*cluster fuck, tit run*). For clarity it is helpful to qualify references to "taboo words" by noting what category of taboo they represent—for example, sexual taboos, religious taboos, scatological taboos, etc.—especially in cases where references (or stimuli) are restricted to one or two of these categories. New taboo words can emerge, especially in slang (Eble, 1996). Taboo words range from the mildly offensive (e.g., *damn, fart*) to the very offensive (e.g., *cunt, nigger*), as word-scaling and autonomic-arousal studies have demonstrated (see Janschewitz, 2008; Jay, 1992; Jay, Caldwell-Harris, & King, 2008; Mabry, 1974).

Word offensiveness or appropriateness depends on contextual variables, and our sensitivity to the context has been demonstrated in numerous studies (e.g., Jay & Janschewitz, 2008; Mabry, 1974; Wells, 1989). Wells (1989) asked college students to list the sexual term (e.g., for oral–genital contact) they would use in different contexts (e.g., with parent, lover, or in mixed company). Technical terms were preferred for mixed crowds and with parents. Sexual obscenities were reserved for same sex crowds and "with my lover" contexts. There is also ample evidence that parents are uncomfortable with sex terms around children (Berges, Neiderbach, Rubin, Sharpe, & Tesler, 1983; Jay et al., 2006).

Mabry (1974) asked subjects to rate a list of sexual terms to determine how likely they would use such words in a conversation. A factor analysis of the ratings produced five separate factors. Two factors are clearly exemplified by taboo words; Mabry labeled them sexual obscenities (*cock, cunt*) and personally defaming words (*bastard, bitch*). The other three factors can be used in polite company or mass media; they are technical expressions (*penis, vagina*), latent sexual terms (*behind, goose*), and euphemistic expressions (*make love, go to bed*). Mabry's study points to the difficulty we have with sex talk: we use slang, which seems too offensive for polite conversation, but, on the other hand, clinical terms seem odd and too formal.

The ultimate offensiveness of words is determined entirely by pragmatic variables such as speaker–listener relationship and social–physical setting, as well as the words used and tone of voice (Jay & Janschewitz, 2007, 2008; Locher & Watts, 2005). Seven-year-olds frequently say "fag" without sensing its inappropriateness the way an adult would. The lack of universal standards for offensiveness due to contextual variability creates problems for defining exactly what offensive or harmful speech is. Verbal abuse research is plagued to define exactly what constitutes abusive speech (O'Leary, 1999). In some cases it is clear that obscenities and insults are abusive; but in addition, so are comments that do not include taboo words (e.g., *What's wrong with you?*). There is obvious overlap between taboo words and abusive speech, but they are not the same. Our sense of offensiveness tends to increase as we mature; what is offensive to children is not necessarily offensive to adults. Young boys find words such as *baby* or *wimp* more offensive than do their parents (Jay & Janschewitz, 2005). The chore for the language learner is to determine what words are appropriate for a given social setting.

How are we able to talk about sex, body parts, or gender differences if those topics are taboo? Languages have different speech styles or standards to synchronize word choice with the given level of formality (Jay, 2003). Speech styles, like clothing styles, range from the casual (e.g., slang in the locker room) to

the formal (e.g., courtroom discourse, conference presentation). Although we talk about sex in many contexts, we have to be cautious about the words we choose to use. Taboo words (e.g., *dick*) in particular are regarded as too repugnant for formal speech, and slang is by definition informal, but clinical sexual references (e.g., *penis*) are acceptable in formal speech.

WHAT MOTIVATES PEOPLE TO USE TABOO WORDS?

Reasons for using or not using taboo words depend on the conversational goals of the speaker. Swearing is like using the horn on your car, which can be used to signify a number of emotions (e.g., anger, frustration, joy, surprise). Our control over swearing ranges from the spontaneous forms (e.g., habitual epithets), over which we seem to have little control, to the reflective forms (e.g., new obscene joke), where we take time to think about what to say (Van Lancker, 1987). Taboo words can be used to achieve a variety of personal and interpersonal outcomes that may be positive, negative, or inconsequential in terms of their impact on others, although some might argue all uses of taboo words are harmful to some degree. We do more than just say swear words; there are specific categories of use that fall under the rubric of swearing (see Jay, 1992, 2000; McEnery, 2006; Montagu, 1967; Sagarin, 1962). Besides literal or denotative uses (*We fucked*), the primary use of swearing is for emotional connotation, which occurs in the form of epithets or as insults directed toward others. Epithets are offensive emotional outbursts of single words or phrases used to express the speaker's frustration, anger, or surprise (*Holy shit! Fuck me!*). Two-thirds of our swearing data are linked to personal and interpersonal expressions of anger and frustration, which seem to be the main reason for swearing (Jay, 1992, 2000). Insulting forms of taboo word use include name calling and put downs (*asshole, bitch*) and cursing or wishing harm on someone (e.g., *fuck off, eat shit and die*). Taboo words are a defining feature of sexual harassment, blasphemy, obscene phone calls, discrimination, hate speech and verbal abuse categories.

Positive social outcomes are achieved by using taboo words in jokes and humor, social commentary, sex talk, storytelling, in-group slang, and self-deprecation or ironic sarcasm in order to promote social harmony or cohesion (also see Clark, 1996; Jay, 2000; Zoglin, 2008). A positive outcome is also achieved when a speaker replaces physical violence with speech or feels a sense of relief or catharsis after swearing, although there is scant evidence to verify this (Jay et al., 2006). As for inconsequential outcomes, researchers have often overlooked the fact that many episodes of taboo word use are casual conversational habits (e.g., *This CD is fucking great*) in the absence of any clear social motive other than fitting in with others' informal use of taboo words. This casual use of taboo words, which may not be intended to be offensive, can still be regarded as impolite or offensive by bystanders.

The taboo lexicon is like a box of tools engineered for a wide range of emotional expression. This is what is meant by their *utility*: one can achieve a myriad of personal and social goals with them. From an evolutionary standpoint, swearing is a unique human behavior that developed for a purpose. Taboo words persist because they can intensify emotional communication to a degree that nontaboo words cannot (Jay & Janschewitz, 2007; Potts, 2007). *Fuck you!* immediately conveys a level of contempt unparalleled by nontaboo words; there is no way to convey *Fuck you!* with polite speech (Jay & Janschewitz, 2007). The emotional impact of taboo words produces a unique high level of arousal unlike other nontaboo emotional words (Jay et al., 2008; Kensinger & Corkin, 2003; LaBar & Phelps, 1998).

HOW OFTEN DO PEOPLE SAY TABOO WORDS AND WHO SAYS THEM?

I used the word *ubiquity* in my title to point to two features of taboo words that are worthy of more attention. Curse words are used persistently over a person's lifetime and are frequently uttered in public. The term *persistence* here refers to the fact that we say taboo words as soon as we speak and we continue to swear into old age even through dementia and senile decline (Jay, 1992, 1996a, 2000). Taboo speech persists through brain dysfunction for aphasics and Alzheimer's patients who forget the names of their family members but still remember how to swear, or they "mysteriously" begin swearing in cognitive decline when before they did not. Paul Broca's famous aphasic patient, Leborgne, lost his facility for fluent speech but his swearing did persist. Neuroscientists over the years have gone to great lengths to explain the language functions Leborgne lost but not why his swearing persisted through brain damage (Jay, 2000, 2003). Swear words persist through parents' attempts to eliminate them as parental sanctions have virtually no effect on swearing rates when children reach adulthood (Berges et al., 1983; Jay et al., 2006).

Field studies of swearing have provided consistent estimates for frequency of using taboo words. Jay (1980a) found 70 swear words in an 11,609-word tape-recorded sample of conversation or a rate of 0.7% of the corpus. More recently, a British spoken word corpus showed that swear words occurred at a 0.3% to 0.5% rate (McEnery, 2006). Similarly, using an electronically activated recorder, Mehl and Pennebaker (2003) found a 0.5% taboo word rate over a 2-day period. The rate of swearing was consistent over the recording sessions for individual speakers ($r = .86$). Substantial individual differences were also found: taboo word rates varied from a minimum of 0% per day to a maximum of 3.4% per day. In regard to swearing on the Internet, Thelwall (2008) reported a .2% swear word rate in MySpace, and Subrahmanyam, Smahel, and Greenfield (2006) reported that 3% of chat room utterances contained obscene words (1 obscenity every 2 min). Recent work by Mehl and colleagues (Mehl, Vazire, Ramirez-Esparza, Statcher, & Pennebaker, 2007) determined that the average speaker uses 15,000–16,000 words per day. Estimating spoken word rates using the figures mentioned above (0.5% to 0.7%) suggests that speakers utter 80–90 taboo

words per day. To further support the argument that taboo words are common, we can benchmark them against the base rate of other common nontaboo words: Mehl and Pennebaker (2003) found first person plural pronouns (*we, us, our*) occurred at a 1.0% rate. Language researchers do not regard personal pronouns as low-frequency words.

As for who swears, that depends on one's group identity and personality factors. Swearing has been documented in the lexica of many social groups: soldiers, police, high school and college students, drug users, athletes, laborers, juvenile delinquents, psychiatric patients, and prisoners; although production rates are unknown (see Jay, 1992, 2000). One's social rank plays a role in swearing; McEnery (2006) found socially low-ranking speakers produced higher rates of swearing than did high-ranking speakers. An individual's personality also plays a significant role in frequency of taboo word use; hostility, sexual anxiety and religiosity loom preeminent. Hostile swearing is a defining feature of the Type A personality. In contrast, swearing is not prevalent in populations characterized by high religiosity, sexual anxiety, or sexual repressiveness (Janschewitz, 2008; Jay, 1992, 2000). Mormons and other religious affiliates opt out of swearing altogether and turn to euphemisms instead (see Jay, 2005). According to Mehl, Gosling, and Pennebaker (2006) swearing is negatively correlated with high scores on the Big Five personality factors of agreeableness and conscientiousness. Recently, Fast and Funder (2008) found that people who swore most frequently in life-history interviews were generally described as more extraverted, dominant, and socially negative. Their research complements Mehl et al. (2006) in that people who swear more are clearly lower in agreeableness and higher in extraversion. In contrast to Mehl et al. (2006), Fast and Funder found no strong negative correlation with conscientiousness: females' swearing was only slightly negatively correlated with it $(r = -.12)$, and males' swearing was correlated with neuroticism $(r = .20)$.

WHAT ARE THE MOST FREQUENTLY USED TABOO WORDS?

A summary of our studies conducted in 1986, 1997, and 2006 indicates that public taboo word episodes rely on a small set of words that are repeated often (see Jay, 1992, 2000; Jay & Janschewitz, 2008, for details). This conclusion extends beyond previous reports that were based on a single count from one specific time and place (e.g., Cameron, 1969, 1970). By looking at 20 years of taboo word data we can see what has changed and what has remained stable.

Though over 70 different taboo words types were publicly recorded, most taboo word use involves 10 frequently used terms (*fuck, shit, hell, damn, goddamn, Jesus Christ, ass, oh my god, bitch*, and *sucks*), which account for roughly 80% of the data. In fact *fuck* and *shit* alone amount to one third to one half of all the episodes in counts between 1986 and 2006. The top 10 words are essentially the same set found in 1986, 1997, and 2006, drawing mainly on sexual obscenity and profanity. Further, highly offensive words (*cunt, cocksucker, nigger*) occur relatively infrequently in public over the time period. The report of a stable lexicon over the years contrasts with a misperception that the most frequent swear words are in constant flux.

Both speaker gender and age affect word choice and frequency; men swear more frequently in public than women (also see Jay, 1980b, 1996a; McEnery, 2006; Mehl & Pennebaker, 2003; Thelwall, 2008). Men accounted for 67% of public swearing episodes in 1986, but the gap narrowed to 55% by 2006. Men say more offensive words (e.g., *fuck, shit, motherfucker*) more frequently than women do. Women say *oh my god, bitch, piss*, and *retard(ed)* more frequently than men do. In fact the mild expletive *oh my god* accounted for 24% of the women's 2006 data and women were five times more likely than men to say it. Men and women swear more frequently in the presence of their own gender than in mixed-gender contexts. As for age, swearing occurs across all age ranges, but swearing rates peak in the teenage years and decline thereafter (Jay, 1992; Thelwall, 2008).

DOES PSYCHOLOGICAL SCIENCE ACKNOWLEDGE THE SIGNIFICANCE OF THE FREQUENCY OF TABOO WORD USE?

The short answer here is not enough. Laboratory studies have so far produced contradictory views of taboo word frequency. In order to move forward in research with taboo word use, we need to be adequately informed about taboo word frequency because word frequency is a powerful predictor of ease of processing in a number of language tasks (Jay, 2003). Looking back to Elliot McGinnies' (1949) classic study of perceptual defense, participants were subliminally (tachistscopically) presented with taboo and nontaboo words. The duration of presentation was increased over trials until participants were able to recognize each word. McGinnies found taboo words required longer exposure times to be recognized than did nontaboo words. Jerome Bruner (in McGinnies, 1949) suggested that longer exposure times were necessary because participants were unfamiliar with taboo words, due to the words' infrequent occurrence in print material. McGinnies argued the opposite, stating that taboo words were "quite common in conversational usage" (p. 250). In a reply to McGinnies, Howes, and Solomon (1950) emphatically agreed with Bruner's position:

> Horrified, we insist that Professor McGinnies speak for himself. Common morality, even if plain observation were to fail, constrains us to believe that his neutral words better characterize the conversations of at least his collegiate subjects. We certainly can assure him that our own conversations are spiced only very rarely indeed by such delicacies of expression. (p. 230)

One might attribute this quaint genteelism about taboo speech to 1950s-era prudery were it not for the persistence of inaccurate estimates of the frequency of swearing.

Williams and Evans (1980) used a lexical decision task to replicate McGinnies' findings, assuming their taboo stimuli occurred infrequently in word counts based on written frequency (e.g., Kucera & Francis, 1967). They noted as follows: "Several of the stimulus items were not listed in word counts, but their written frequency should be low" (p. 196). This low frequency assumption is repeated in recent neuroscience research involving emotional word processing. LaBar and Phelps (1998) wrote, "it is assumed that taboo words are of relatively low frequency of occurrence in language (e.g., Williams & Evans, 1980)" (p. 490). It is interesting to note that when Sharot and Phelps (2004) selected stimuli from LaBar and Phelps and had subjects scale neutral and "arousing" words for familiarity, they found no difference in familiarity scores as a function of word type. More recently, in a study of memory for emotional words, Kensinger and Corkin (2003) proposed low frequency as a possible explanation for enhanced memory for taboo words: ". . . it remained possible that memory benefit for the taboo words, as compared with the negative and neutral words, resulted from the fact that taboo words had a lower word frequency" (p. 1176). But we know now that taboo words are not low-frequency words.

A major problem in research concerning taboo words is the use of frequency estimates that are based on written frequency counts. The common supposition that taboo words are low frequency "in language" relies on the conflation of written and spoken estimates. Written frequency estimates grossly underestimate the use of taboo words in a language because they do not take into account the frequency of swearing in everyday conversations as well as more demonstrative forms (Jay, 1977, 1980a). We argue here, along with McGinnies (1949), that taboo words are common in young adults' lexica (Janschewitz, 2008; Jay, 2000; Jay et al., 2008; Jay & Janschewitz, 2008). The misperception of categorical low frequency of use leads investigators to erroneously choose low-frequency words as controls or foils in experiments. We do not intend to suggest that the results of recent emotion research using taboo words are invalid. Conclusions based on the more salient quality of arousal elicited by taboo words should be powerful enough to be only slightly influenced by erroneous assumptions about word frequency; misperceptions about frequency do not undermine the words' emotional impact (see Jay et al., 2008). Researchers can obtain sufficient estimates of word use by norming their stimuli in pretesting studies, but they should not rely on their potentially erroneous impressions of how frequently taboo words occur.

IS A FOLK KNOWLEDGE OF TABOO WORDS SUFFICIENT FOR PSYCHOLOGICAL SCIENCE?

The short answer to the question is "no," as we find that folk knowledge of taboo words, what we learn about them from parents and peers, can be flawed. People have an abiding interest in swearing because we grew up in a culture where we quickly learned that swear words are the words we have to know, but we cannot say them. This is the starting point of folk knowledge of taboo words: some words are taboo and some are not. We also learn that taboo words are not equal—they represent different levels of emotion: *Fuck you!* represents a greater level of anger than *crap!* As we become more socially aware we learn the third aspect of taboo words: We can say a word in one context but not others. *Eat shit!* is acceptable, maybe even expected, in a locker room, but it is impolite at the dinner table. It takes time for nonnatives to learn a native's level of knowledge, for example, nonnatives can know that *shit* is offensive, but they may not know when and where to say it (Jay & Janschewitz, 2008; Thomas, 1983).

We know what taboo words are; however, this does not render a psychological science that takes in a full account of swearing. A superficial understanding of taboo words is in part due to misrepresentations of the swearing in the media. Although there is persistent interest in the media regarding the public use of taboo words (e.g., Angier, 2005; Ungaro, 1997), in many cases, media analyses serve to perpetuate myths about swearing, such as the myth that only undereducated speakers swear. Swearing crosses all socioeconomic classes (Jay, 2000; McEnery, 2006). The negative framing of swearing reinforces the notion of taboo words as substandard speech and is used by authority figures to relegate swearing to bad behavior that cannot be condoned (O'Connor, 2000). Media ignore situations where swearing is beneficial, such as when it is cathartic or a useful substitute for physical violence (see Jackson, 1866/1958). A negative dismissive attitude toward swearing is in part responsible for why mainstream psychology has ignored swearing as a research topic. To counter some of the myths and misperceptions about taboo words, psychological science needs to shed more light on the dark side of language; however, a comprehensive analysis of swearing will necessitate a reformulation of what language is.

HOW SHOULD PSYCHOLOGICAL SCIENCE DEFINE LANGUAGE?

When scholars disregard or dismiss swearing as irrelevant to a complete understanding of language, we are left with a polite or sanitized and therefore false science of language. The entirety of humanity, the angry, hateful, or enticing emotional expressions all languages contain are ignored (Jay & Janschewitz, 2007; Potts, 2007). As if offensive emotions played no role in language, Pinker (1994, p. 334) asserted that swearing is not "genuine language" because it is the product of subcortical brain activity. Pinker's emotional versus nonemotional dichotomy is false because languages produce a wide range of emotional expressions. Unfortunately, psycholinguists in the past drew heavily from Chomsky's (1957) structuralist theory of language ("What are the rules that generate sentences?"), which does not address emotion in language at all. A functionalist approach ("Why do people speak to each other?") avoids the "emotion gap" of structuralism by addressing emotional and social uses of speech (Clark, 1996; Jay, 2000, 2003; Jay & Janschewitz, 2007; Potts,

2007). A similar problematic situation arose with P. Brown and Levinson's (1987) influential definition of "politeness theory," which was predicated on the false assumption that politeness is culturally normative and ignored the frequent purposeful use of offensive language to achieve social goals in arguments, court room discourse, and political debates (see Culpeper, 1996). The original politeness theory turned out to be too polite at the expense of a more accurate analysis and understanding of the goals and purposes of rude, offensive, and impolite language.

Conventional conceptualizations of language (R. Brown, 1965; Clark & Clark, 1977; Hockett, 1960) need to be expanded to capture how words communicate emotion. Emotion information is produced and understood through word choice, emphasis or stress, and speech volume (Jay, 2003). Understanding a speaker's emotional state by what is said and how it is said is an essential part of our everyday emotional intelligence, and is a sense that can be lost through brain damage, such as when some patients with amygdalar damage lose the ability to project or detect emotion in speech (Adolphs, Russell, & Tranel, 1999). Most natural language processors and semantic network models ignore taboo words entirely, except WordNet (Fellbaum, 1998). If natural language processors are to simulate the full range of human language functions, then they need to acknowledge the function of swearing. Bower (1981) anticipated the need to understand the role of emotion in models of language and semantic memory. He argued that the emotional aspects of words are an inherent part of their semantic meanings and that the emotional context for a word's use is stored along with its semantic and syntactic properties. Our informants bolster Bower's argument, as they can recount vivid details of being punished for saying taboo words (Jay et al., 2006). In contrast, because the contexts are not as arousing or provocative as they are for taboo words, most people have no emotional memory of learning nontaboo words.

Once we have a semantic network that includes emotion information at the lexical level, we can use emotion as a basis for lexical access during the swearing process (see Levelt, Roelofs, & Meyer, 2000). Words are tagged with information regarding their arousal level, offensiveness, and appropriateness (see Jay, 2003; Osgood, Suci, & Tannenbaum, 1957; Staats & Staats, 1958). The speaker uses emotion tags during lexical access to choose offensive or inoffensive words. A male patient chooses *penis* instead of *dick* when he tells his physician "I was bit on the penis by a tick," though he would likely tell his buddies over a beer that he was "bit on the dick." The syntax and semantics remain the same in the utterance, only the emotional nuances change.

Speech production models have not incorporated tabooness as an aspect of lexical selection, but semantic network models could do this, with modifications. Multiple Code Theory (MCT; Bucci, 2000; Bucci & Freedman, 1978) already has an emotional level, and Adaptive Control of Thought (ACT; Anderson, 1996) could accommodate emotion words into its multiple levels framework. The power of MCT comes from melding parallel-distributed processing (Seidenberg & McClelland, 1989) with emotion insights from modern psychoanalytic theory. MCT proposes that information in the human mind exists in both verbal and multiple nonverbal channels. Verbal code is dominant in the conscious processes that are used to regulate and direct ourselves. It can activate imagery, emotions, and actions such as cringing when we hear disgusting words. Similarly, Anderson's (1996) ACT model of semantic memory includes knowledge networks made up of propositional, imaging, spatial, and temporal information about actions, events, general semantics, and personal information. If ACT can learn to perform procedures such as adding numbers, it can learn to swear (see Jay, 2003, for a more detailed analysis).

DOES PSYCHOLOGICAL SCIENCE EVEN NEED A THEORY OF SWEARING?

Psychology would profit from a unifying theory that can capture both universal and idiosyncratic aspects of swearing. The theory needs to acknowledge that we have similar nervous systems for emotional expression, but different personalities, learning histories, and cultural constraints. The neuro-psycho-social (NPS) model of swearing (Jay, 2000) is one such comprehensive framework that specifies the conditions under which swearing is likely to occur based on a speaker's neurological state (e.g., autonomic arousal), psychological status (e.g., agreeableness), and social sensitivity (e.g., impoliteness). All episodes of swearing originate in a nexus of NPS conditions: a nervous system in a person in a cultural context. The NPS conditions are interdependent as one can see by looking at TS (Morris, 1993). One might assume all Touretters have the "same" disorder, but if this is the case, why are their obscene words and gestures culturally specific? For example, a Japanese Touretter is likely to yell ancestral allusions (*shit grandma!*) because irreverent references to ancestors are extremely taboo in Japan. In contrast, Danish Touretters rarely yell ancestral allusions. American Touretters flip the middle finger, but Kuwaiti Touretters do not. TS manifests itself in terms of speech and gesture depending on where its victims were reared (Jay, 2000).

The NPS model is a series of 24 postulates tested for truth value (see Wyer & Collins, 1992). Postulate 2.10, for example, states the following: Propositional cursing obeys semantic and syntactic rules, since swearing is rule-bound, not chaotic or random. To test the model, the next step is to search for evidence that would invalidate 2.10. If no counter evidence is found, then the postulate is assumed to be true, and no counter evidence has been found for 2.10—for example, no one talks like the popular hyperbole, "every other word was a swear word" (take a long sentence and insert a swear word every other word and you can see what I mean). Native speakers do not say sentences like "My suitcase is a whore" or "Our corpses were fucking" because these do not make sense. "I have to shitting" is not produced because it is not grammatical. Native speakers' utterances collected so far do not contain semantic or syntactic violations like

those in the examples (see Jay, 1992, 2000). It would be informative to analyze nonnatives' taboo word errors before they acquire competence in English, as errors should show what forms of swearing are easier to learn than others.

NPS can predict the probability of using a taboo word denotatively (literally) versus connotatively (emotionally) based on semantic use weights (Jay, 1992). For example, if a speaker is going to say *asshole*, the probability of using it connotatively in reference to a thoughtless person is .92, whereas the probability of using *asshole* denotatively to refer to the anal sphincter is only .03. *Piss(ed)* is used more equivocally: half of the references denote urination (*I have to take a piss*) and the rest connote anger (*Don't piss me off*). Ultimately, NPS aims to predict the likelihood of taboo speech, which is accomplished through conditional (if, then) statements that take the following general form:

IF N state + P state + S context, *THEN* the speaker will say X.

Rigorous tests of NPS remain to be conducted; however, NPS would predict that swearing is highly likely from a Type A adult in a stressful social situation but not from an introverted religious child under the eye of her teacher. Brain dysfunction (TS, aphasia, amygdalar damage) can override normal psychological and social conditions; frontal lobe damage can increase swearing (e.g., Phineas Gage), but damage to the amygdala can decrease swearing.

Recent research on angry exchanges and on native versus bilingual differences has been supportive (Bousfield, 2007; Jay & Janschewitz, 2008). For angry swearing, NPS seeks answers to basic questions: What is the connection between anger and swearing? What is the cause? The consequence? Who is the victim? Angry swearing should unfold in a stagelike fashion from a provoking event and level of felt anger to retaliatative swearing (see Averill, 1983; Jay, 2000). Bousfield (2007) examined the triggering, progression, and resolution of spoken exchanges that contain offensive speech between a London chef and the workers in his busy kitchen and between a military drill sergeant and his new recruits. From the onset, one sees how the provoking events effect the swearing that ensues. For example, when the chef notices that his helper has delayed an urgently needed dish, he rants, "What's going on here you . . . what is going on about fucking foie gras, eh you arsehole—why don't you go fuck off home" (p. 2199). The helper meekly replies, "I don't want to," to the angry chef. In the military example, when the drill sergeant notices a new recruit performing poorly at drill, he reacts with sarcasm and obscenity by saying, "Hey, are you on a fucking Sunday outing are you, eh?" (p. 2192). In both cases the superiors are provoked by their underlings' poor performance, and the swearing reflects the superiors' felt anger. The subordinates are not in a position to retaliate, fearing further verbal abuse or punishment. Bousfield uses NPS to analyze a number of exchanges like this, noting what triggered the event, how the speaker responded, and what transpired after that. Another success for NPS has been the accurate prediction of

differences between native and bilingual English speakers in terms of their awareness of swearing etiquette in the English. Jay and Janschewitz (2008) found that native speakers are more sensitive than bilinguals to how differences in speaker status and differences in taboo word choice affect overall offensiveness of taboo expressions (also see Jay, 1992).

NPS would be more useful when fully integrated into theories of language. Efforts have been underway to do this using MCT-like representations to link affect to word meaning. Jay (2003) outlined how general semantic models can be expanded to include emotion words and can account for phenomena such as taboo word associations (also see Jung, 1910). At present, NPS stands more as a starting point for understanding the vicissitudes of swearing than as a finished theory of swearing. One goal here is to use this review to spur future research.

WHAT WORK LIES AHEAD?

The ubiquity of taboo words throughout the lifespan, across all known languages, demands a reformulation of theories of human language toward a more central role for taboo speech. Critical areas for future research concern children's acquisition of swearing, and a focus on determining a more scientific account of the positive and negative psychosocial effects of swearing. There remain a number of issues to be addressed by psychological science—for example, swearing occurs frequently in college communities (Mehl & Pennebaker, 2003; Mehl et al., 2007), but future research must sample younger speakers and more diverse communities and ethnic groups (see Mosby, Rawls, Meehan, Mays, & Pettinari, 1999; White, 2002).

The fact that Americans swear frequently is no trivial matter; swearing results in significant problems at home, in public schools, in the workplace, and in electronic media (Baruch & Jenkins, 2006; Daro & Gelles, 1992; Deffenbacher, White, & Lynch, 2004; *Fox Television v. FCC,* 2007; Heins, 2007; Jay, 1996b, 2000; Martell & Sullivan, 1994). Legal scholarship on verbal sexual harassment, indecent speech, road rage, or verbal abuse would benefit from psychologists' insights about what speech is acceptable and what is not. Research on anger management and prejudice can help us better understand the cause of verbal abuse or sexual harassment and can encourage efforts to ameliorate these problems—for example, children will be better served if their parents helped them cope with anger and not focus so much on punishing them for swearing.

The neuroscience of swearing awaits more work (see Hagoort, 2008). Several issues need definitive answers. Why do some Touretters swear and others do not? Do monolinguals and bilinguals process taboo words similarly? How did we evolve the capability to swear in the first place? Are there analogous mechanisms in subhuman primates? Could event-related potentials measuring semantic and syntactic word anomalies (Hagoort, 2008; Kutas & Hillyard, 1980) be used to support Proposition 2.10? What happens during catharsis; do swear words provide more

relief than euphemisms? Can swearing alleviate acute or chronic pain? Does swearing interfere with executive control? If words harm people, how do we measure harm?

On the psychological level there is more work to be done identifying additional dimensions of personality related to swearing. Swearing may be viewed as a beneficial coping mechanism, but is there an interpersonal cost in terms of person perception in terms of speaker credibility, persuasion, or prejudice? Do men and women differ in their coping by swearing? Why do gender differences in swearing emerge? Are gender differences related to physical aggression? How harmful are ethnic-racial slurs relative to other discriminatory behavior? Can prejudice be explored with implicit attitude testing using taboo words? Is Internet swearing more or less potent than face-to-face swearing? How do dirty jokes and storytelling create a sense of cohesion? In what situations are people rewarded for being good swearers?

On a cultural level, psychologists who study human communication are in a position to contribute significantly to important debates regarding Americans' sensitivity to sexual language. Opinions from providers of healthcare, education, and counseling could help us understand how adolescents benefit from talking about sex (Heins, 2007). Psychological science can also help establish objective standards to define parameters for censoring speech in electronic media by showing what words harm people, which then will have implications for child rearing. We also need a better understanding of what kind of speech is educational and what kind is harmful in teen chat rooms, Blogs, and social networks (MySpace). Research and conclusions will be valuable when they are drawn from a combination of naturally observed public behavior in conjunction with laboratory-based studies of those behaviors. This need to bolster self-report data with observations of actual behavior has been recently championed by Baumeister, Vohs, and Funder (2007). In the end, we seek more answers to questions regarding why we use taboo words and what it means when we do.

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