

WHY WE CURSE
A NEURO-PSYCHO-SOCIAL THEORY
OF SPEECH

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sent many aspects of language, but they will fail to represent a human's use of language.

Conclusion

Curse words have been only of brief and passing interest to psychologists and linguists. The absence of research on emotional speech has produced theories of language that are polite but inaccurate. Contemporary theories ignore the emotional intensification that curse words produce in language, as well as the issues involved in cursing. Curse words are words we are not supposed to say; hence, curse words themselves are powerful. The words contain and are produced by social practices. The articulation of a curse word thus has incorporated into it social rules about gender identity, race, power, formality, prohibition, etc.

Cursing research remains outside the mainstream of psycholinguistic and cognitive research. As suggested, the topic itself is perhaps too taboo for academicians. Even the research that has been done on cursing from a historical-social point of view perpetuates the marginalization of emotional speech in theories of language. The NPS Theory overcomes these earlier shortcomings by viewing language in a more comprehensive fashion that includes offensive speech (i.e., cursing) as an essential element in speech comprehension and production processes. The result is a more realistic view of human language.

Chapter 3

The Neuro-Psycho-Social Theory of Cursing

"Human biological structure, psychological development and cultural systems interact through complicated feedback loops... My hope... is ultimately to subvert a linear discussion and to show that the obscene achieves its eradicable place in human life by weaving together powerful elements of our biology, psychology, and culture."

Morris (1993, pp. 194-195)

This book proposes a Neuro-Psycho-Social (NPS) Theory of cursing that integrates three broad aspects of human behavior: neurological control, psychological restraints, and socio-cultural restrictions. While curse words can be differentiated from noncurse words through a social-historical analysis, an act of cursing cannot be understood without considering simultaneously all three of the dimensions underlying human behavior. The NPS Theory is meant to explain why people curse and why they choose the words they do. The Theory integrates previous historical, social, and psychological approaches in order to represent cursing as the product of three interdependent systems.

In the NPS Theory, the historical-social information about word use is subsumed by the sociocultural system. The sociocultural system describes variables, such as humor elicitation, that a speaker uses to determine if a word is appropriate in a given context or not. Each culture has developed its own criteria for what constitutes a good, funny dirty joke. What makes a dirty joke inappropriate or unfunny depends on the joke and the context (the office versus the local pub). The point is that offensiveness and humor depend on cultural contexts.

The linguistic and semantic analysis of a curse word's use is subsumed by the psychological system in NPS. In the psychological system, it is assumed that a speaker acquires linguistic competence and exhibits linguistic perfor-

mance as the result of psychological development within a sociocultural language context. Different cultures and different languages, of course, present different sets of linguistic and semantic constraints on dirty word use. This is to say that although individual speakers in one society might learn to speak the dominant language, each person's use of curse words is determined by his or her psychological development within a given linguistic, familial, and cultural environment. Psychological development includes variables that directly affect cursing, such as temperament, personality traits, religiosity, social rewards, and punishments.

Underlying the broad sociocultural system in which each person is subject to psychological restraints is a developing brain. The developing brain is a neurological system of control processes. It is essentially similar in all healthy infants, regardless of the cultural context or the language to be learned. In the NPS, two interlocking neural systems are important: (a) the cerebral cortex, which governs speech comprehension and production, and (b) the subcortical systems (limbic system, basal ganglia, and amygdala), which regulate emotional reactions such as approach-avoidance responses. These two brain systems play a central role in regulating a speaker's verbal expressions, so that a person's emotional responses occur at different levels of awareness and controllability. Cursing may take the form of an automatic reflex (outside of awareness and difficult to control) or a more complex, strategic, controlled response (consciously monitored). Finally, we can observe how cursing is controlled by the brain systems by observing brain-damaged speakers whose cursing behaviors are compared to normal speakers' cursing.

The NPS Theory is designed to account for all cursing behaviors in all social and cultural contexts over the course of an individual's psychological development. The NPS Theory provides a three-dimensional model of a person's knowledge of cursing, which develops as a person matures. An individual's knowledge depends on personal experience, psychological makeup, and on the culture in which he or she is raised. As such, a person's style of cursing will be the product of both shared and private experiences.

Past research provides some historical and psychological insight into why people curse. But the neurological level is where we have the most to learn about cursing. We need to look thoroughly at emotion states and how subcortical brain structures affect cursing. The brain is viewed as a storehouse of psychological and sociocultural information that is used to determine how to curse appropriately, that is, when the psychological and social factors require cursing.

The three systems in the NPS Theory are viewed as interlocking systems. One system might predominate over another system in a given situation to produce a cursing episode, but each system has some input into the production of the cursing episodes. The psychological level presumes a neurological level; that is, a brain develops within a person. The socio-cultural system accounts for the context in which the person develops and the social factors that affect cursing in public. Cultural factors include religion, taboos, gender identification, censorship, and social power. The social level presumes psychological and neurological levels; that is, a brain in a person develops in a cultural context that defines and proscribes acts of cursing.

The NPS Theory can be conceptualized as three intersecting spheres of influence, as in Figure 3.1. An act of cursing is instigated by factors involved within one or more of these spheres. For example, Broca's patient, Leborgne, who could only say "Sacre nom de Dieu!", was dominated by his neurological sphere. Neurological control predominates in the cry from an Alzheimer disease victim or a Tourette. An infant mimicking a parent's swearing is primarily using the neurological and psychological spheres, with little influence from the sociocultural level. Telling a novel and clever dirty joke is the product of all three spheres. Any cursing episode can be represented as a point in the three-dimensional space in Figure 3.1.

The NPS Theory is designed to account for why a speaker does or does not curse in a particular context. The way in which the brain moderates behavior is of growing interest, in this case, how the cortical and subcortical areas represent curse words and produce cursing in emotional expressions. The brain responds to a range of emotional information; some responses are reflexive and others are voluntary. Emotional expressions draw words from a cursing lexicon, or cursing module, in the cortex. Curse words are embedded in the semantic neural network that develops and expands with experience. The neural network approach to speech and memory processes is referred to as a connectionist model or as parallel-distributed processes. It has become increasingly popular to use this approach to describe language processes, and the approach is also applicable to cursing, if curse words are described as part of a network of concepts (see McClelland, Rumelhart, & the PDP Research Group, 1986).

The NPS Theory has both explanatory and predictive power. It explains how and why a speaker uses curse words in a sample of speech. The NPS Theory also predicts the conditions under which speakers in a culture are likely to use

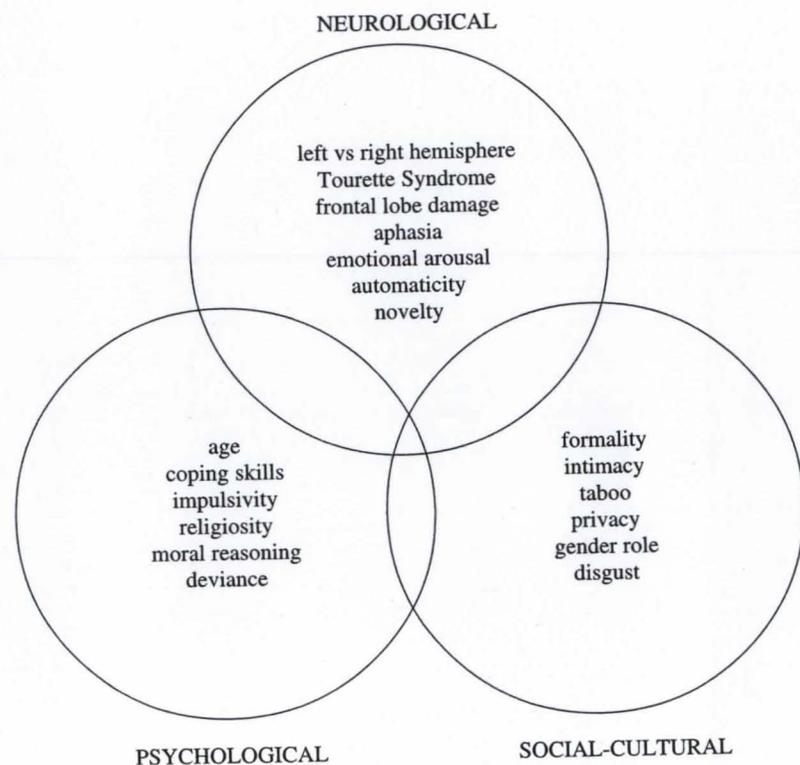


Figure 3.1. The Neuro-Psycho-Social Model of Cursing

curse words. The ultimate form of the cursing episodes depend on a speaker's psychological development and the social context in which he or she operates. The NPS Theory accounts for why a person might swear in one context but not another. For example, lovers use vulgar sexual terms in the bedroom for purposes of enticement, but they never utter these words in public.

For the NPS Theory, cursing is never chaotic, meaningless, or random behavior — cursing is seen as purposeful and rule-governed. The goal of the NPS Theory is to generate likelihood “rules” that underlie concepts of appropriateness, offensiveness, and humor. Native speakers acquire cursing rules as they learn language. Discovering and testing these cursing rules is meant to

give the Theory predictive power. The more accurately the NPS Theory can predict acts of cursing, the more valid is our understanding of cursing.

Acquiring language means acquiring information about when and where to curse and what to say. One set of likelihood rules is psychological in nature; another is social. Each system in the NPS Theory is a set of production rules for cursing. Psychological and social rules can be congruent or they can conflict. For example, although it is inappropriate to use obscenities in a classroom, a child with an impulsive personality will ignore the social rule. This set of cursing rules represents a “grammar” of cursing that generates instances of cursing.

As cursing rules are developed, violations to the rules can be studied. Any number of utterances can be examined to determine if they are “ungrammatical” according to the Theory. The NPS grammar can also be used to study bilingual cursing, for example, how foreign speakers acquire the rules of cursing in English. As a rule-governed, grammatical system, the NPS Theory can be integrated into popular theories of speech production and comprehension.

The goals of the NPS Theory, and of this book, are: (a) to promote a broader understanding of the *essential* role of cursing in human communication; (b) to promote the integration of cursing knowledge into theories of language in linguistics and psychology; and (c) to stimulate research and discussion of cursing in pertinent professional literature. At an applied level, a better understanding of cursing will assist professionals in the social sciences to ameliorate contemporary social/legal problems caused by cursing, such as sexual harassment in the workplace. As conceived here, the development and growth of the NPS Theory will promote a basic understanding of the phenomenon that can be applied to real-world speech problems.

Propositional Speech, Nonpropositional Speech, and the Right Cerebral Hemisphere

"No doubt many apoplectic persons found in the streets are locked up for drunkenness because the policeman does not know that swearing is a very automatic process, which can persist under conditions produced by fatal brain lesions as well as by drink."

Jackson (1879/1958, p. 181)

For 100 years, the literature in psychology has contained accounts of brain-damaged patients who, due to their damage, frequently curse while not being able to produce "normal" speech. Contemporary neuropsychologists refer to the work of Broca, Harlow, Jackson, and Gilles de la Tourette for descriptions of uncontrollable cursing in the 1800s.

Jackson (1879/1958) drew a distinction about speech that has become customary: At one extreme, speech production is viewed as novel and creative; Jackson termed this "propositional" speech. At the other extreme is "nonpropositional" speech, which is automatic, reflexive, and noncreative. Nonpropositional speech includes cursing, idioms, and cliches. Brain-damaged patients can *lose* propositional language (the ability to construct syntactically correct sentences), while retaining the ability to curse. Unfortunately, neurologists have paid little attention to the cursing that remains.

Both Broca and Jackson described brain-damaged patients who, following their injuries, retained nonpropositional language (e.g., "Hell!"), but lost their ability to produce propositional speech. As cursing was never regarded as being important in its own right, the cursing in these patients was documented only because it remained as a residual form of language in the

aftermath of brain damage. Neurologists in general are more interested in documenting the language abilities that have been lost than accounting for why the facility for cursing remains.

Since the late 1800s, cursing has only been a minor quirk for neurologists, except for those studying aphasia and Tourette Syndrome. Cursing speech noted in clinical reports is relegated to the automatic or nonpropositional category. No serious interest in the propositional aspects of cursing has emerged. Researchers have segregated cursing speech from “normal” speech production, as if cursing and normal speech usage were unrelated.

From the earliest writings relating brain and speech, psychologists have never fully integrated the neurological correlates of cursing into psycholinguistic models. Interesting accounts of “uncontrollable” cursing appear as isolated exceptions among a huge body of research on “normal” speech processes. Cursing still remains linked to brain-damaged populations and dysfunctional speakers. No one asks how the normal brain produces acts of cursing.

The purpose of this chapter is to review and evaluate the neurolinguistic literature that links cursing to brain functions, especially those functions controlled by the left and right cerebral hemispheres. The subcortical brain areas implicated in cursing (basal ganglia and limbic system) are addressed in Chapter 6. The neurological dimension of the NPS Theory is necessary to account for the different levels of voluntary control over cursing. At one extreme is “automatic” cursing, and at the other is “controlled” cursing. An automatic process is one that goes on without there being conscious awareness of the process, while a controlled process is part of consciousness or working memory. Both cognitive processes monitor and control speech (see Shiffrin & Schneider, 1977). While many regard cursing as an automatic process, it is not necessarily one. Controlled cursing occurs when a speaker constructs a joke or thinks about how to insult someone. Cursing also frequently occurs automatically, with minimal conscious monitoring. After experiencing sharp pain, a speaker may automatically shout, “Damn!” Importantly, neuropsychology research shows that *cursing operates at different levels of control* and is not restricted to automatic processing.

1.1 Automatic/nonpropositional speech relies heavily on the right cerebral hemisphere.

For some time, neuroscientists have held the view that the left and right cerebral hemispheres control different types of mental activity. Many language functions like calculation, analytic thinking, and verbal reasoning predominate in the left hemisphere (LH). Emotional speech, visualization, musical abilities, spatial reasoning, and holistic processing predominate in the right hemisphere (RH). This division of labor is known as lateralization. This chapter will show that propositional cursing relies on semantic and syntactic modules in the LH and automatic cursing relies on emotional functions in the RH.

The studies supporting this cursing lateralization hypothesis are listed in Table 5.1. We will discuss these studies in the remainder of the chapter.

Following Jackson’s distinction between propositional and nonpropositional speech, Van Lancker (1972) renewed interest in the distinction, but now as a continuum with nonpropositional speech at one end and propositional speech at the other (see Figure 5.1). Cursing (the production of expletives) is

Table 5.1. Summary of Evidence Supporting Right Hemisphere Lateralization of Cursing

Source	Nature of Evidence*
Broca (1861/1965)	Leborgne: “Sacre nom de Dieu”
Jackson (1866; 1874)	“Thank God, I am an atheist”
Alajouanine (1956)	Aphasia (verbal stereotypy)
Smith (1966)	E.C.: “Goddamnit”
Chase et al. (1967)	Ictal speech - “Damn” (DAF)
Gainotti (1972)	Aphasia, catastrophic reaction
Winner and Gardner (1977)	RH and connotation
Ley and Bryden (1979)	LVF and emotional faces
Graves et al. (1981)	LVF and emotional words (males)
Brownell et al. (1984)	Metaphor comprehension
Van Lancker (1987)	Review paper and J.S.
Code (1987; 1989)	Aphasia, RWRU “Bloody hell”
Van Lancker and Klein (1990)	Cursing at Reagan’s picture
Speedie et al. (1993)	No cursing without basal ganglia
Damasio (1994)	Phineas Gage and contemporaries

* Abbreviations: DAF, delayed auditory feedback; RH, right (cerebral) hemisphere; LVF, left visual field; RWRU, real-word recurrent utterance.

located at the nonpropositional end along with automatic or conventionalized speech like idioms and clichés. Nonpropositional forms of speech, like cursing, are present after damage to the dominant left hemisphere of the brain (LBD). Automatic cursing is of primary interest here due to its persistence following brain damage. (Note: Dysfunctions do not always create automatisms.)

Some types of brain dysfunctions are associated with propositional cursing, for example, speakers with mental retardation or schizophrenia. Propositional cursing, according to the Jacksonian model, relies on syntactic and semantic modules in the LH. It is assumed that a healthy LH exercises control over emotional impulsivity. Patients who incur left frontal lobe damage lose their ability to control impulsive thoughts and behaviors, resulting in an emotional storm that has been described (Gainotti, 1972) as a “catastrophic reaction” characterized by anger, aggression, swearing, anxiety, and refusal. Patients’ verbal aggression occurs with LBD because the facility for cursing remains intact in the RH and related substrata and the LH cannot suppress these emotions.

While damage to the LH commonly results in involuntary cursing during recovery, the converse is rarely reported. RH damage rarely results in auto-

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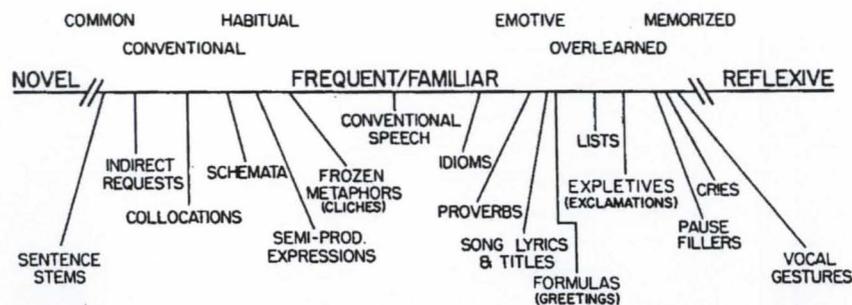


Figure 5.1. Nonpropositional Speech

From Van Lancker, D. (1987). Nonpropositional speech: Neurolinguistic studies. In A. Ellis (Ed.), *Progress in the psychology of language* (Vol. 3, pp. 49-118). Hillsdale, NJ: Erlbaum.

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matic cursing. The majority of right-brain damage (RBD) patients do not swear at all (Gainotti, 1972), which is consistent with the claim that a cursing module resides in the RH. In fact, the evidence suggests that damage to the RH can eliminate cursing altogether and that RBD causes difficulties with emotional expression and emotion perception. It is therefore most fruitful to look for a cursing module in the RH along with related forms of emotional processing (see the discussion of Gardner’s work following). Note, the discussion is restricted at present to Western cultures, recognizing that there is some speculation that speech dominance is lateralized differently (with emotional stimuli predominant in the LH not RH) in Japanese speakers (Tsunoda, 1985).

Aphasia and Left Hemisphere Brain Damage (LBD)

As mentioned earlier, both Broca (1861/1965) and Jackson (1866/1958; 1874/1958) described patients with LBD who retained their ability to curse. Broca described his patient Leborgne, also known as “Tan,” as a man who could not speak although he could swear. Tan, who suffered from LBD, was only capable of uttering “Sacre nom de Dieu!” Jackson also noted that patients with LBD occasionally swear when vexed. He regarded these oaths as automatic and nonpropositional:

Their automaticity is proved by the fact that the patient cannot repeat them; he may swear but cannot ‘say’ his oath. (Jackson, 1874/1958, p. 135)

In other words, the patient may automatically utter a curse word but he cannot repeat a curse when asked to do so. Jackson noted that a communist orator could utter “Thank God, I am an atheist,” and not make a blunder because “thank God” is merely an automatic vulgar interjection. Jackson (1879/1958) and his contemporaries regard swearing as an automatic process, as the quotation at the beginning of the chapter suggests.

Cursing Research After Broca and Jackson

The literature on automatic cursing following Broca and Jackson is sparse; interest in the phenomenon waned until the mid-1950s. Alajouanine (1956) discussed oral expression in aphasia based on his study of 317 cases. He

regarded cursing as a form of “verbal stereotypy” that was uttered unconsciously (generally in anger) and involuntarily, with or without linguistic meaning. Smith (1966), in his oft-cited paper, reported the case of “E.C.” who after a left hemispherectomy would utter expletives or short, well-articulated, understandable emotional phrases such as “Goddamit,” providing clear evidence of a RH cursing module. Over the course of recovery, E.C. produced more propositional speech and he could repeat sentences on command. Another important report correlating emotional behavior and hemispherically restricted lesions is Gainotti’s (1972) analysis of 160 aphasics; half had LH lesions and half had RH lesions. Curses, swearing, and religious invocations were common emotional expressions produced by the LBD patients, with catastrophic reaction. Cursing is frequent among Wernicke-type aphasics (those who have difficulty comprehending speech), found in 57%, compared to the 47% of Broca-type aphasics (those who have difficulty producing fluent speech). Patients with RH lesions are referred to as having “indifference reactions” (IR), a lack of interest in one’s mental/emotional status. The majority of the IR patients (70 of 80) do not swear, and they lose the use of metaphorical speech.

These three studies provide solid evidence that LBD produces patients with a range of speech disabilities; however, cursing abilities are retained. The case for RH cursing has become even stronger in recent years.

The Work of Van Lancker and Code

The strongest evidence supporting the notion that cursing is lateralized in the RH comes from the work of Van Lancker (Van Lancker, 1987; Van Lancker & Klein, 1990) and Code (1987; 1989).

Van Lancker (1987) supported the heterogeneity-in-language hypothesis, which states that certain types of language are structurally and functionally unique, and they are represented differentially in the brain along a propositional-nonpropositional dimension (also see Lesser, 1978), as represented in Figure 5.1. Nonpropositional utterances are holistically understood, whereas propositional phrases have meaning based on an analysis of the component parts of the utterance. Van Lancker’s evidence of the RH’s role in cursing is based on observations of aphasics, some with LH hemispherectomies (patient “J.S.”). Her RBD patients exhibit impairments in recognizing idioms, metaphors, and

punch lines in jokes. Interestingly, Van Lancker (personal communication) notes that there are no clinical tests of the comprehension or production of curse words. Patients are usually discouraged from using curse words during recovery, as if cursing were not functionally useful during the recovery process.

Van Lancker and Klein (1990) monitored the recognition of familiar personal names in aphasics with implications for RH cursing. Although the experiment was designed to show how the RH processes autobiographical information, it reveals a role for cursing in the RH. LBD patients perform very poorly on traditional linguistic tests; however, emotional and personal material like personal name are linked to the RH. It had previously been demonstrated that LBD patients could recognize familiar faces and match them with their names: LBD patients respond quickly and confidently to personal names, and they can match famous persons’ names to their photographs. Consider the response of one LBD patient in the naming study:

Patient 2, who had the most profound language deficit, for example, chuckled while correctly matching name of Rachel Welch and produced an expletive when correctly matching the name of Ronald Reagan to the corresponding photographs. (Van Lancker & Klein, 1990, p. 523)

We see here that the negative emotional evaluation (the expletive) is stored along with the visual information about Reagan in the RH.

In several reports (see Code, 1987), Code has documented the speech of aphasia patients with LBD. Examples of aphasics’ utterances appear in Table 5.2. Code separates nonmeaningful utterances (syllables such as “tu tu tu”) from real-word recurrent utterances (RWRUs). RWRUs clearly include curse words (e.g., “fuck,” “bloody hell bugger,” “fucking hell”). These real-word utterances are produced by the RH (from striatal basal ganglia and cortical involvement). Code ruled out any involvement by the left posterior mechanisms in RWRUs, which he regarded as nonpropositional, emotionally charged, automatic in nature, and holistically produced.

Table 5.2. Real-Word Recurrent Utterances in Aphasia

bloody hell	bloody hell bugger
fuck fuck fuck	fuck off
oh you bugger	Percy’s died
oh boy	I’m a stone
yes yes yes	you can’t
fucking fucking fucking hell (one entry)	

Code makes his clearest statement about the RH's involvement in cursing in the conclusion of his 1989 paper:

It has been argued that some real-word utterances fit well with what we know of right hemisphere-limbic interactions (Code 1987). The emotionally charged, obscene and expletive utterances are favourite candidates...

...the right hemisphere, through its capacity to provide a motor Gestalt, controls the actual motor speech activity of the phonoarticulatory mechanisms (Code 1987: p. 73). The same arguments can be applied to coprolalia and ictal speech automatisms. Here too the fragment of emotionally charged, holistically structured and invariantly produced language implicates a limbic-right hemisphere interaction. (Code, 1989, p. 173)

For both Code and Van Lancker, the involvement of the RH in the production of nonpropositional speech is demonstrated by the type of speech which survives LBD. The conclusion is that cursing survives as a form of nonpropositional speech because it is produced by RH-limbic involvement, which survives the LBD.

Other Neurological Reports Linking the RH to Cursing

The clearest supporting evidence of the RH lateralization of cursing comes from LBD patients who engage in cursing episodes. However, there are other links between the RH and cursing if one includes studies of "emotional speech," which demonstrate a RH-emotional speech link.

Chase et al. (1967) studied an epileptic patient's response to delayed auditory feedback (DAF) during an epileptic seizure. During the ictal speech event, the patient repeated the word "damn." There was no increase in speech amplitude nor was there an increase in phonation duration, both of which usually accompany DAF in normal subjects. It was as if the curse words were under open-loop control in the epileptic patient. In other words, the cursing was not under the patient's voluntary control; if it had been, it would have been accompanied by increases in amplitude and phonation.

Graves, Landis, and Goodglass (1981) studied the lateralization of non-emotional and emotional words with a visual field technique. Emotional words were presented either to the RH via the left visual field or to the LH via the right visual field. The authors reported a left-visual-field (LVF/RH) advantage for males who were presented with emotional words. In a related

experiment, Schwartz, Davidson, and Maer (1975) reported that subjects demonstrated prominent left lateral eye movements (LEMs) when they are asked to answer emotionally charged questions. The left LEMs indicate a strong RH-emotion link.

Ley and Bryden (1979) investigated visual field differences for the recognition of emotional expressions in the cartoon line drawings of male characters. Subjects judged whether the emotional expressions on two different faces were the same or different. They found significant LVF superiority for emotional-expression recognition, depending on the degree of affective expression on the faces. Their results are consistent with the hypothesis that the RH predominates in the processing of emotional expressions. These results are similar to those found with emotional verbal materials in Gardner's research.

Gardner and his associates (Brownell, Potter, Michelow, & Gardner, 1984; Winner & Gardner, 1977) provided evidence for the RH link when they demonstrated that RBD patients have difficulty perceiving the emotional aspects of metaphors. RBD patients have trouble matching pictures to their corresponding metaphorical sentences. RBD patients show a sensitivity to denotative aspects of words but are insensitive to connotative aspects of words. In contrast, LBD patients are sensitive to connotative meanings but not to denotative aspects of word meanings. Normal people are sensitive to *both* denotative and connotative aspects, but unilateral RBD will destroy the appreciation of emotional aspects of speech.

The NPS Theory assumes a RH cursing module is a set of interconnected cortical and subcortical structures in the right hemisphere. If this is valid, there should be a disruption of cursing when RH interconnected structures, such as the basal ganglia, amygdala, or limbic system, are damaged. At least one study supports this hypothesis. Speedie, Wertman, Ta'ir, and Heilman (1993) found that serial automatic speech, singing, the recitation of rhymes, and swearing were impaired following RH basal ganglia surgery. Only propositional speech, idioms, and social greetings were preserved. Additional work on the subcortical systems linked to cursing are needed to clarify their roles in cursing.

Reviews of the literature on emotions and hemisphericity (see Borod, Bloom, & Haywood, 1998; Bradshaw & Nettleton, 1981; Brown, Potter, Michelow, & Gardner, 1984; Lum & Ellis, 1994; Ross, Homan, & Buck, 1994; Winner & Gardner, 1977) draw the conclusion that automatic nonstrategic cursing is a function of the right hemisphere. The RH has also been implicated in the perception of the emotional tone in a speaker's voice and in

the recognition of emotional mood and facial expressions. Based on these reviews, the NPS Theory assumes that the right hemisphere produces negative emotions (depression) and that it monitors emotional moods and the emotional elements of stories and facial emotions.

A complete evaluation of Postulate 1.1 does require a word of caution. Most neurological studies are based on the responses of young clinical patients, not on healthy normal subjects. Future research should sample healthy subjects in order to narrow the search for a cursing module. Informative work should employ visual field, split-brain, and brain-imaging techniques. For now, we know that people are able to curse because the right hemisphere and subcortical areas control and monitor emotional speech. When the RH is damaged, the ability to curse is lost.

1.2 Propositional/novel cursing relies heavily on the left cerebral hemisphere.

Right Hemispherectomy Patient

Interviewer: Would you make up a sentence using the word "coat?"

Patient: I gotta leave now, would you please get me my coat?

(Adapted from Van Lancker, 1987, pp. 106, 108)

Patient with Severe LH Damage

Interviewer: Table. What's it used for?

Patient: Oh. Table! huh. Oh, well, uh, do, um, uh. damn. Table! (Laughs)

There is ample evidence implicating the right hemisphere in the expression and interpretation of strong emotions. But the evidence supporting LH cursing is mainly negative evidence — that is, when the LH is severely damaged, propositional cursing disappears. For the LH, especially telling is the evidence that Broca's aphasics, who cannot articulate fluent speech, are able to articulate curse words nonpropositionally. Nonpropositional cursing is not novel; it is characterized by overlearned, automatic, conventional expressions. Propositional forms of cursing require both intact Broca's and Wernicke's areas in the left hemisphere and connections to the cursing module in the right hemisphere.

The point of Postulate 1.2 is that propositional cursing must draw heavily on the abilities of the left hemisphere. In contrast, automatic cursing draws more heavily on the processes in the right hemisphere. When a speaker intends to construct a novel obscene joke, the LH is required to complete the process of constructing the joke. The evaluation regarding the social appropriateness

of the joke (that is, whether to tell it or not) depends on the left frontal lobe, as we see in the case of Phineas Gage.

Damasio (1994), in *Descartes' Error*, brought to our attention a compelling case of inappropriate cursing by Phineas Gage. Gage incurred brain damage to his left frontal lobe and ventromedial prefrontal areas as the result of a mining accident. He lost his ability to inhibit cursing, and in one sense, Gage lost his conscience — his sense of right and wrong. The decision-making sense occupies the area of the brain where Gage had been impaled. Following his accident, Gage could not make his behavior conform to the social rules he had followed before his accident.

According to Damasio, the decision-making ability needed to inhibit offensive speech relies on the frontal lobes, especially the left hemisphere and ventromedial prefrontal areas. The control or inhibition of offensive speech relies on the functions of the left hemisphere and prefrontal areas; when they are damaged, control over inappropriate cursing is lost. Thus, an act of cursing is the product of LH decision-making abilities and semantic-syntactic processing along with emotional processing in the RH.

The Right Hemisphere and the NPS Theory

Speech production and comprehension require an intact LH. Propositional-sentence production with curse words uses the LH and taps the emotional processes in the RH. When the LH is damaged, LBD aphasics will curse, but they will not comprehend or produce normal speech. Frequent cases showing the persistence of cursing following LBD means that the cursing module (lexicon) predominates in the RH. A patient with a normal RH but LBD frequently curses (+) during and after recovery. Most of the LBD cursing represents automatic or nonpropositional speech. The left frontal lobe normally functions to inhibit inappropriate acts of cursing. When the frontal lobe is damaged, the decision-making abilities necessary to control cursing are lost and poor social judgment and inappropriate cursing occur. Theories of language must integrate the emotional aspects of language in the RH along with the semantic and syntactic aspects represented in the LH. Segregating the emotional aspects of words from the semantic and syntactic aspects cannot be justified by neurological evidence; all three are necessary to produce normal speech.

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Patient with Severe LH Damage

Interviewer: Table. What's it used for?

Patient: Oh. Table! huh. Oh, well, uh, do, um, uh. damn. Table! (Laughs)

There is ample evidence implicating the right hemisphere in the expression and interpretation of strong emotions. But the evidence supporting LH cursing is mainly negative evidence — that is, when the LH is severely damaged, propositional cursing disappears. For the LH, especially telling is the evidence that Broca's aphasics, who cannot articulate fluent speech, are able to articulate curse words nonpropositionally. Nonpropositional cursing is not novel; it is characterized by overlearned, automatic, conventional expressions. Propositional forms of cursing require both intact Broca's and Wernicke's areas in the left hemisphere and connections to the cursing module in the right hemisphere.

The point of Postulate 1.2 is that propositional cursing must draw heavily on the abilities of the left hemisphere. In contrast, automatic cursing draws more heavily on the processes in the right hemisphere. When a speaker intends to construct a novel obscene joke, the LH is required to complete the process of constructing the joke. The evaluation regarding the social appropriateness

of the joke (that is, whether to tell it or not) depends on the left frontal lobe, as we see in the case of Phineas Gage.

Damasio (1994), in *Descartes' Error*, brought to our attention a compelling case of inappropriate cursing by Phineas Gage. Gage incurred brain damage to his left frontal lobe and ventromedial prefrontal areas as the result of a mining accident. He lost his ability to inhibit cursing, and in one sense, Gage lost his conscience — his sense of right and wrong. The decision-making sense occupies the area of the brain where Gage had been impaled. Following his accident, Gage could not make his behavior conform to the social rules he had followed before his accident.

According to Damasio, the decision-making ability needed to inhibit offensive speech relies on the frontal lobes, especially the left hemisphere and ventromedial prefrontal areas. The control or inhibition of offensive speech relies on the functions of the left hemisphere and prefrontal areas; when they are damaged, control over inappropriate cursing is lost. Thus, an act of cursing is the product of LH decision-making abilities and semantic-syntactic processing along with emotional processing in the RH.

The Right Hemisphere and the NPS Theory

Speech production and comprehension require an intact LH. Propositional-sentence production with curse words uses the LH and taps the emotional processes in the RH. When the LH is damaged, LBD aphasics will curse, but they will not comprehend or produce normal speech. Frequent cases showing the persistence of cursing following LBD means that the cursing module (lexicon) predominates in the RH. A patient with a normal RH but LBD frequently curses (+) during and after recovery. Most of the LBD cursing represents automatic or nonpropositional speech. The left frontal lobe normally functions to inhibit inappropriate acts of cursing. When the frontal lobe is damaged, the decision-making abilities necessary to control cursing are lost and poor social judgment and inappropriate cursing occur. Theories of language must integrate the emotional aspects of language in the RH along with the semantic and syntactic aspects represented in the LH. Segregating the emotional aspects of words from the semantic and syntactic aspects cannot be justified by neurological evidence; all three are necessary to produce normal speech.

Psychological Aspects of Cursing

“There are the many daily examples of taboo speech, usually profanities or obscenities, that express such emotions as hatred, antagonism, frustration, and surprise. The most common utterances consist of single words or short phrases (though lengthy sequences may occur in ‘accomplished’ swearers), conveying different levels of intensity and attracting different degrees of social sanction.”
Crystal (1987, p. 61)

2.1 Cursing serves several communicative functions.

Part III focuses on the psychological aspects of cursing. Chapter 10 introduces the psychological aspects of cursing. According to the NPS Theory, cursing is rarely meaningless or purposeless. The functions or purposes of cursing, according to the NPS Theory serve, three interdependent forces: (a) neurological control, (b) psychological motives and restraints, and (c) sociocultural constraints. The psychological aspects of cursing depend primarily on one’s psychological makeup and one’s learning history. One’s personality is the product of a combination of genetic (innate) tendencies and characteristics plus behaviors acquired through learning and experience. Each person’s language calls on a unique set of tendencies and experiences that shape his or her identity; the NPS Theory has to account for how these factors produce cursing.

The effect of language on identity is probably more profound than we generally imagine: That is, we learn to live in language and we exist through the language we learn. Cursing is an emotional element of language that alters the way we view ourselves and others. The aggressive person learns aggressive curse words and uses them to express his/her aggression towards others; he/she perceives others on the basis of how others use aggressive language. The sexually anxious person uses sexual terminology in a manner that exposes

his/her underlying anxiety through hesitation, word choice, and avoidance. The sexually anxious person experiences and interprets sexuality of the self and others through a forbidden language of sexuality.

Asshole, bastard, bitch, cunt, prick, motherfucker, chicken-shit, nigger, dyke, and honkey are not just words we say to each other. How we use these curse words portrays our deep emotional investment in a personal identity which we use to experience the world, to differentiate ourselves from others, and to express our feelings and attitudes about others. The use of these words tells us who we are and how we fit in the world. We do not just utter curse words; curse words are part of our identities.

The remainder of this chapter outlines the psychological issues addressed in more detail in Part III: language acquisition, personal memory, personality traits, cursing habits, and human sexuality.

Learning to Talk, Learning to Curse

Cursing appears as soon as children hear curse words, as early as one year of age (Jay, 1992a). Children's cursing emerges in a predictable fashion. Early cursing and name calling are based on references to scatology and perceived differences about others (e.g., *snot-eater, four-eyes*). In adolescence, cursing becomes more abstract and socially based. Gender differences in cursing emerge as soon as children attend school: Boys curse more and use more words and use more offensive words than do girls. Cursing reaches a peak in adolescence but continues into old age, persisting through senile decline and dementia.

Children learn that curse words are associated with emotion states through classical conditioning, the repeated pairing of words (e.g., *damn!*) with emotional events. Curse words effectively replace infantile expressions of anger such as biting and screaming (Goodenough, 1931). Children associate curse words with all emotion states (e.g., joy, surprise, fear); they learn to express emotions through words, and they learn to perceive others' emotional states through the emotional speech they observe. Children learn that curse words intensify emotions in a manner that noncurse words cannot achieve.

Language learning and cursing depend on one's social, emotional, and cognitive reasoning abilities. As children become more cognitively sophisticated, their emotional language, name calling, and sexual references shift to match their higher mental functioning. Many uses of curse words occur at an

automatic or reflexive level in the form of response cries and epithets. Eventually, the semantic and syntactic rules for cursing are acquired, allowing children to use curse words appropriately in propositional statements (Jay, 1992a). These propositional statements are primarily used to express emotions (connotation), but curse words also function to make references about the world (denotation).

Awareness of and Memory for Cursing Episodes

A second psychological aspect of cursing involves two questions about human consciousness and memory: "At what level are we aware that we are cursing when we curse?" and "How well do we remember how others insult us?" The NPS Theory assumes that cursing episodes occur at different levels of awareness. Cursing that is automatic and reflexive may be produced with little conscious awareness on the part of the speaker (Goffman, 1978), while novel propositional constructions (e.g., creating a dirty joke) are intentional, effortful, and controlled processes that take time and conscious effort.

How one remembers acts of cursing depends on the depth of memory processing. Shallow levels of processing lead to weak memory traces; deeper, emotional cursing leaves stronger traces. But memory and consciousness are highly susceptible to stress, and stress may create so much anxiety that a speaker cannot remember what was uttered. Alternatively, an obscene remark may cause so much stress to the victim of the insult that the memory for the incident is difficult, even impossible, to forget.

These awareness issues are important to individuals engaging in everyday conversations at all developmental levels, especially children. In order to use curse words conventionally, children have to learn what curse words are, as well as when and where not to say them. This requires the building of a mental model of what is offensive and a model of contextual constraints, as in language acquisition in general. In order to curse effectively, children must learn the emotional effects of curse words on others and commit these effects to memory. The child's knowledge of cursing (e.g., what words are hurtful, forbidden, or taboo) become a part of his or her larger linguistic and cultural intelligence. How the child ultimately uses this knowledge of cursing depends on his or her personality characteristics and social environment.

Personality Factors: Motives and Restraints

Personality characteristics refer to the fairly stable tendencies, habits, and perceptions that people develop as a function of genetics and learning. Personality factors are the unique traits that allow us to describe an individual, as well as to compare his/her traits with others. The NPS Theory assumes that some personality factors are crucial to the use of or suppression of cursing.

People vary on the degree to which they are offended by emotional language about sex, race, body functions, body parts, body products, religion, and taboos. However, two personality factors are clearly linked to cursing: religiosity and sexual anxiety. Individuals with high religiosity and sex anxiety are highly offended by emotional language; they restrain themselves linguistically, and they attempt to prohibit others from cursing in public.

Some personality factors are associated with the motivation to use curse words, such as impulsivity and masculinity. Personality types associated with cursing are the antisocial personality and the Type A personality. These kinds of people have difficulty restraining their use of curse words; they use curse words to achieve personal states or effects (e.g., for stress reduction) and to affect others (e.g., for bullying). Thus, one's personality is associated with cursing in productive and reactive ways. One's personality is expressed through motives behind cursing and/or the needs behind restraining cursing. One's personality is also reactive to others' use of offensive speech.

Speech Habits and Social Learning

Children acquire the emotional meanings of words through a process of classical conditioning, while they learn the utility of cursing through operant conditioning. Operant conditioning can strengthen the tendency to curse if cursing leads to rewarding consequences; the tendency to curse will be weakened if speakers are punished for cursing. Cursing permits the child to express emotions and to perceive emotions in others. As children see that cursing affects others in desirable and undesirable ways, they learn the functional utility or power of cursing.

A good example of cursing in order to achieve a negative impact on listeners is *name calling*. For example, children insult their peers by mentioning their physical characteristics (e.g., *fatty*, *four-eyes*, *spaz*). But this act of

name calling provides information about how the speaker views him/herself in relation to others, in addition to affecting (e.g., angering, humiliating) the listener and thus having practical utility for the speaker.

Name calling can reach an extreme where participants engage in acts of verbal duelling or ritualistic insulting which produces both psychological and cultural effects. About insulting rituals, Crystal noted:

The subject matter ranges from subtle forms of intellectual sarcasm and humor to the crudest possible attacks on a person's courage, sexual prowess, or relatives. At one level, attacks may be subtle and indirect, involving allusion and figurative speech; at another, there may be explicit taunts, boasts, name calling, and jokes at the other's expense. (Crystal, 1987, p. 60)

The value of name calling and verbal aggression on a personal or social level is debatable. According to Hughlings Jackson, the use of verbal insults is better than the use of physical assaults:

It has been said that he who was the first to abuse his fellow-man instead of knocking out his brains without a word, laid thereby the basis of civilization. (Jackson, 1879/1958, p. 179)

Sexual Identity and Sexual Terminology

Human sexuality is a critical aspect of emotional language in general and of cursing in particular because sexuality is one of the most tabooed aspects of human existence. The language of sexuality is intimately connected to one's emotional life, one's sexual orientation, and one's cursing habits or style. Human sexuality becomes represented in two ways: The sexual body is represented as a materiality, and a set of sexual ideas or sexual language is developed about that materiality.

Children learn sexual terminology through interactions with peers and adults. Parents express their sexual values, fears, and anxieties to children when they inhibit or punish sexual references. Punishment and avoidance of sex terms teach the child that sexual words are powerful and that sexuality itself is powerful. Parents with high sexual anxiety are likely to transfer their anxiety to their children, who learn that both sex talk and sex are to be avoided. This learning takes place through the repression of sex talk itself through a course of negations and omissions. Through the acquisition of sexual terminology and the conditioned fears and pleasures regarding sexual-

ity, the child develops a level of comfort with sexuality. This sexual identity will influence how a speaker uses words for sex acts, body parts, and gender-related insults with other people.

As children develop linguistically and sexually, their conversations about sexuality become more highly dependent on who is listening. Both adolescent and adult sexual conversations clearly depend on intimacy, sexual identity, and formality (Wells, 1990). Most adults can talk about sexuality with lovers or with others who share similar sexual preferences. But almost all young adults have trouble talking about sex with their parents (those who avoided sex talk in the first place) and in mixed gender crowds.

Most people talk about sex by using vulgar terms and sexual slang (Jay, 1992a). Clinical terms are reserved for polite situations. Some sex acts are so taboo (e.g., oral sex) that no acceptable term can be used in polite company. Euphemisms and circumlocutions are commonly used in order to talk about sex and taboo topics. In fact, married couples, cohabiting couples, and sexually active partners create personal idioms and idiosyncratic terminology to use in intimate situations (Cornog, 1986). We see in the following chapters in Part III that the use of sexual language is very important to speakers, revealing their personality traits, attitudes about sexuality, and parental influences. Both the physical acts of sex and one's sexual identity are expressed and experienced through language choices.

Everyone Knows How to Curse: Implicit Knowledge of Cursing

All adult speakers acquire curse words, which means we know what words are curse words, as well as how to use those words correctly and effectively in multiple contexts. Whether one decides to use curse words or not is a different matter. It is essential for us to know what kinds of curse words exist in our native language so that we can tell when someone is emotional or when someone is insulting us. An implicit knowledge of cursing is necessary for understanding how native speakers express emotions verbally. Although we need to know how people use curse words to express emotions, not everyone has to use curse words to express emotions. Many restrained speakers will try not to curse under any circumstances.

Some speakers will not use curse words even though they know their meanings and purposes. People suppress cursing for a variety of psychologi-

cal reasons previously mentioned. These psychological restraints on cursing may persist through the adult years into old age. A family member might never hear evidence that a grandmother knows how to curse until dementia sets in. A previously restrained Alzheimer patient will surprise her family when she curses for the first time. Although there have been changes in location and context, she did not learn to curse in the nursing home; she knew how to curse all along, *implicitly*, and the family fails to appreciate that she has comprehended cursing without ever explicitly using it.

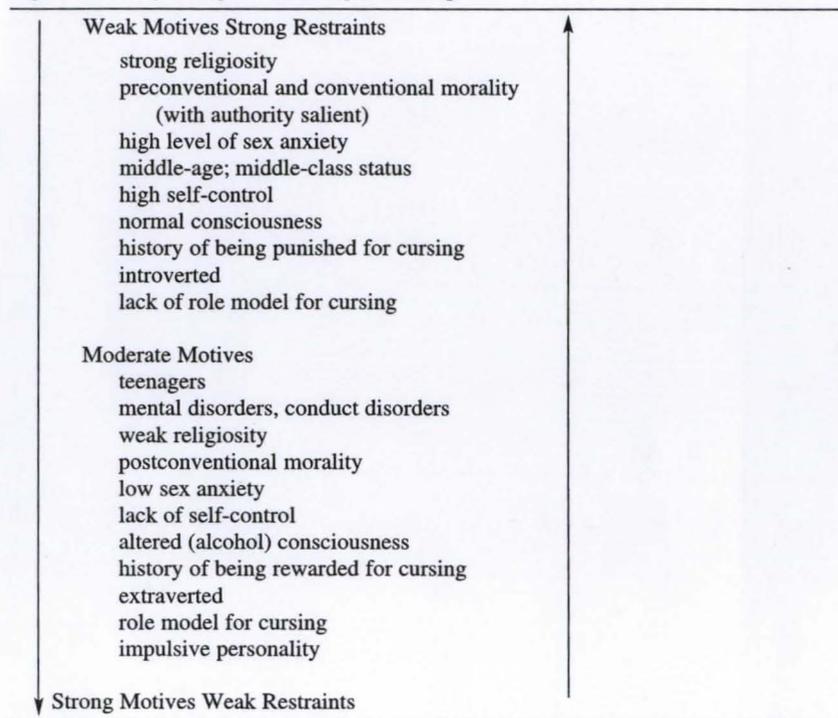
Like the dementia patient, other brain-damaged speakers reveal an implicit knowledge of cursing. Hughlings Jackson (1879/1958), for example, reported that aphasics can use emotional utterances appropriately. He described patients who uttered "god bless" when frustrated or "damn" when a family member did not arrive at the hospital on time. However, the patient could not construct sentences with curse words on demand. While a brain-damaged patient cannot construct sentences, he or she can utter meaningful emotional statements learned in childhood. Hence, curse words remain accessible as implicit knowledge when other avenues for communication become unavailable.

The NPS Theory and Psychological Motives for Cursing

There are a number of personal qualities that are associated with cursing. We can divide these into two categories: motives that instigate acts of cursing and restraints that suppress acts of cursing. We can also conceptualize this system of restraints and motives as a continuum of psychological force on a speaker, as in Figure 10.1. Represented in the figure are both the strong psychological restraints on (or weak motives for) cursing and the weak restraints on (or strong motives for) cursing. According to the NPS Theory, the weak restraints/strong motives increase (+) a speaker's probability of cursing and strong restraints/weak motives decrease (-) a speaker's probability of cursing. Predicting a speaker's likelihood of cursing from a psychological perspective amounts to adding up his or her pattern of psychological motives and restraints. The psychological variables are weighed with neurological and socio-cultural variables to estimate the likelihood of cursing.

The theory of cursing must include psychological variables that motivate cursing (+) or restrain it (-). Psychological variables depend on physical

Figure 10.1. Psychological Motives for Cursing



maturation, cognitive/language development, and social learning/awareness. Children are punished (-) or reinforced (+) for episodes of cursing in the course of language development, and through this experience, they develop a sense of identity and a sense of emotional expression that affect their need to curse at others. Shy adults might not curse (-), while aggressive ones will (+). Cursing also depends on personality factors such as religiosity, sex anxiety, and introversion, which act to restrain (-) cursing. Each individual's psychological characteristics have to be factored into his/her needs and motives for cursing.

The psychological motives for cursing come from a variety of sources: language acquisition, personality traits, child-rearing practices, social rewards and punishments, human sexuality and intimacy, and emotional needs. The remainder of Part III looks at these sources one by one. The reader should

remember throughout the discussion that these factors are not independent; they operate collectively and interdependently to produce psychological motives and restraints for cursing. In addition, these psychological motives and restraints are subject to neurological and sociocultural influences, according to the NPS Theory.