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Prototypicality Among Metaphors: On the Relative Frequency of Personification and Spatial Metaphors in Literature Written for Children Versus Adults

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This paper argues that personification is the prototypical metaphor and that it occurs more frequently than other metaphors, especially during the early stages of child development. The paper also argues that personification comes disguised in many other figurative devices (metonymy, spatial metaphors, and container metaphors) and syntactic expressions (frozen word orders and the nominal gender marking that is obligatory in languages such as French and German) and that it pervades many other aspects of human cognition (including fundamental philosophical frameworks such as objectivism and subjectivism).

The main source of data is a frequency analysis of personification and spatial metaphors in two samples of poetry: one written for adults, the other for children. I categorized the topic and vehicle of each metaphor as either human or nonhuman and spatial or nonspatial and found that spatial topics and vehicles were relatively infrequent. Personifications (nonhuman topic-human vehicle) were much more common in both samples and were relatively more frequent in the sample written for children. Explanations of this developmental difference are proposed, based on the cognitive and social functions of personification in literature written for children versus adults.

The importance of studying the comprehension and use of metaphor is by now widely recognized. As Lakoff and Johnson (1980) pointed out, metaphor is so pervasive in everyday language, thought, and action that the conceptual system by which we perceive, think, and act must be fundamentally

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metaphorical in nature. However, despite the large number of recent studies, little agreement has been reached on the nature of the processes underlying metaphor use. One of the difficulties is that the choice of which metaphors or class of metaphors to study has been largely arbitrary, and different studies have examined different and perhaps fundamentally incomparable types of metaphors (MacKay & Konishi, 1980b), resulting in a diversity of conflicting claims about metaphor in general.

As a first step toward correcting this problem, the present study set out to determine whether one class of metaphors can be considered more fundamental and worthy of study than the others. I began with spatial metaphors (e.g., "I'm feeling up today") because of the claim (Shepard, 1981, p. 339) that spatial thinking and metaphors may be fundamental (innate), general (underlying both verbal and nonverbal thought), and psychologically powerful (serving as the basis for dreams). If this claim is correct, I reasoned that spatial metaphors may be the prototypical metaphor, which is more common than all other types of metaphor, especially including metaphors generated by and for children.

To provide a basis for comparison, I also examined the relative frequency of personification (e.g., "Fortune is a woman"), another obvious and easily categorized type of metaphor (Lakoff & Johnson, 1980) that occurs in all languages of the world (Ullmann, 1972) and that is specially frequent in literature written for children (MacKay & Konishi, 1980a) and in the dreams reported by children (Van de Castle, 1970).

Personifications also resemble spatial metaphors in other respects. Like spatial metaphors, personifications can be categorized into topic (the animal or thing beng commented on), vehicle (the human characteristic attributed to the topic), and ground (the implied basis for assigning the vehicle to the topic). In the "Fortune is a woman" example, the topic is *fortune* and the vehicle is *woman*. The ground for the metaphor is an assumed connection between the two, implied characteristics such as changeability, fickleness, or irrationality.

Another similarity between personification and spatial metaphors is their formulaic nature (after Lakoff & Johnson, 1980). They fall into formulaic categories that can be used to generate an unlimited number of new examples. Although these examples are not frozen in their syntactic structures, they are not completely variable either, and they display various consistencies in their use. These consistencies have been catalogued in Lakoff and Johnson (1980) and in MacKay and Konishi (1980a), two studies that used rather different techniques. I begin by reviewing these recent findings in order to illustrate the general nature of these two classes of metaphor and the techniques for examining them. I next turn to the main purpose of the study: to compare the frequency of personification and spatial metaphors in two literature samples, one written for adults and the other for children. I then examine the

hypothesis that personification comes disguised in many other figurative devices, including spatial metaphors, and that it pervades many other aspects of everyday thought, including fundamental cognitive frameworks such as objectivism and subjectivism.

CONSISTENCIES IN THE USE OF PERSONIFICATION AND SPATIAL METAPHORS

Lakoff and Johnson (1980) examined the class of metaphors dealing with spatial relations: up–down, in–out, front–back, on–off, deep–shallow, and central–peripheral. These metaphors fall into a relatively small number of subclasses containing examples that are conceptually consistent with one another (see Table 1). An example is the class HAPPY IS UP, which includes exemplars such as "I'm feeling up" and "My spirits rose." A related class is SAD IS DOWN, which includes exemplars such as "I'm feeling down" and "My spirits sank" (see Table 1 for additional examples). No examples have been reported where an UP metaphor conveys sadness or a DOWN metaphor conveys happiness. Because assigning the meaning "I'm feeling sad" to an expression such as "I'm feeling up" is logically possible, this consistency is surprising. It suggested to Lakoff and Johnson (1980) that spatial metaphors have a nonarbitrary basis in our physical and cultural experience.

TABLE 1
Examples of Consistencies in Spatial Metaphors[a] and in Personifications[b]

Consistencies in Spatial Metaphors	
HAPPY IS UP	*SAD IS DOWN*
I'm feeling up.	I'm feeling down.
My spirits rose.	I'm depressed.
You're in high spirits.	He's feeling low these days.
Thinking about you gives me a lift.	I fell into a depression.

Consistencies in Personifications			
Entities Personified Male		*Entities Personified Female*	
The sun	Time	The moon	Mice
Dogs	Lions	Ships	Countries
Wolves	Gorillas	Cars	Spiders
		Mice	

[a]Adapted from *Metaphors We Live By* by G. Lakoff and M. Johnson, 1980, Chicago: University of Chicago Press.

[b]Adapted from "Personification and the Pronoun Problem" by D. G. MacKay and T. Konishi, 1980a, *Women's Studies International Quarterly, 3,* pp. 149–163.

MacKay and Konishi (1980a) reached a similar conclusion from an analysis of consistencies in personifications. They examined a large sample of children's literature and found that some entities were consistently personified male, whereas others were consistently personified female. For example, they found that *old age* and the *moon* invariably became personified female, whereas *time* and the *sun* invariably became personified male. Then they developed hypotheses to account for these consistencies. For example, they hypothesized that the authors of the children's literature may be conveying the attitude that the (male) sun is powerful, like the stereotypical man, whereas the (female) moon is weak, a mere reflection of the sun, much like the stereotypical woman who reflects or derives power from men. Similarly, like the stereotypical female, old age is portrayed as passive, a mere consequence of time, which holds the power or control over aging. In short, MacKay and Konishi (1980a) hypothesized that a shared cultural experience (sex-role stereotypes) may provide a nonarbitrary basis for male versus female personification in children's literature.

MacKay and Konishi (1980a) then devised some systematic tests of this hypothesis. First, they obtained semantic differential ratings for the animals mentioned in the children's stories and analyzed the ratings along standard connotative dimensions: evaluation (good vs. bad), potency (strong vs. weak), and activity (active vs. passive). The result showed that animals that were consistently personified as male in the children's stories (e.g., bears, dogs, lions) received significantly higher ratings on the potency and activity dimensions than animals consistently personified as female (e.g., larks, ladybugs, and spiders), but both classes of animals were rated equally high on the evaluative dimension.

For purposes of comparison, MacKay and Konishi (1980a) then obtained semantic differential ratings for terms referring to human males (e.g., *husband, uncle, boy*) and human females (e.g., *wife, aunt, girl*). The resulting ratings were remarkably parallel to those for the personified animals: Ratings on the potency and activity dimensions were significantly higher for male than female terms, whereas ratings on the evaluative dimension were statistically equivalent. These parallels suggested that stereotypes associated with human males and females were determining whether animals in the children's stories became personified as male or as female.

This conclusion was strengthened by examining what characteristics or traits authors attributed to animals personified as male or as female in the children's stories. Animals personified as male were usually assigned traits such as *mischievous, angry,* and *mighty,* which receive high ratings for strength and activity on the semantic differential test. However, animals personified as female were usually assigned weak and passive traits (e.g., *pretty* or *timid*), as if the human stereotype also governed the characteristics attributed to these animals. To determine whether this was the case, MacKay

and Konishi (1980a) looked up the adjectives assigned to the animals in the lists of traits making up the sex-role inventories of Bem (1974) and Broverman, Vogel, Broverman, Clarkson, and Rosenkranz (1972). For both inventories, adjectives describing animals personified as male fell into the stereotypically male category significantly more often, whereas adjectives describing animals personified as female fell into the stereotypically female category significantly more often. Taken together, these findings led MacKay and Konishi (1980a) to conclude that a culture-specific sexual stereotype determined all three sets of consistencies: the sex of the personified animals, the traits assigned to these animals, and the way that human males and females are rated on the semantic differential scale.

STUDY I: THE RELATIVE FREQUENCY OF PERSONIFICATION AND SPATIAL METAPHORS IN ADULT LITERATURE

How often are personification and spatial metaphors used relative to other types of metaphor? To answer this question, I examined the metaphors in a sample of poetry written for adults. I chose poetry as the source for my sample because poetry typically contains an abundance of metaphors of all types and because poetic metaphors generally stand out as unusual and imaginative and enable high interjudge reliability in picking them out.

My sample of metaphors can be characterized, therefore, as figurative and unconventional rather than literal and conventional. (That is, metaphors vary along two interrelated dimensions: a figurative/literal dimension and a conventional/unconventional dimension.) Figurative metaphors are perceived in a figurative manner and can be either conventional or unconventional. Figurative metaphors from everyday speech are often conventional (e.g., the personification of nature, ships, countries, cars, the earth, and the moon as female as discussed previously). Figurative metaphors from poetry, however, are often unconventional (e.g., "Autumn is a bosom-friend of the maturing sun" and "My heart is hungry").

By way of contrast, literal metaphors are no longer perceived in their figurative sense; through frequent use, their interpretation has become both conventional and literal. An example is "mouth of a river." We perceive the literal meaning directly and no longer understand a speaker to be saying anything about mouths. Many of the metaphors that Lakoff and Johnson (1980) examined are both literal and conventional (e.g., "Time is money," "Labor is a resource," "Theories have foundations," and "Love is madness").

The corpus. The corpus for Study I consisted of all 59 poems (approximately 58,500 words) in Gordon (1968), a general anthology that is used

widely in university classes and that is highly regarded in the field of English literature. By hypothesis, good anthologies select works that are representative of the field at large, and the conclusions reached in the present study are of necessity limited by the validity of this hypothesis.

Two judges independently read the poems and recorded metaphors they judged to be intentionally figurative, excluding literal and conventional metaphors such as "mouth of a river." The metaphors were achieved in a variety of ways: through the use of nouns (e.g., "the voice of Liberty"), verbs (e.g., "Let not Ambition mock their fruitful toil"), adjectives (e.g., "Here comes weary Winter"), and pronouns (e.g., "The earth and her peoples").

The judges next classified the topic and vehicle of each metaphor as human or nonhuman and as spatial or nonspatial. By way of example, consider the personification "Time held me green and dying in the mercy of his means." The topic *(time)* is a nonperson, and the vehicle is a male person (signified by *held* and *his*). The spatial–nonspatial analysis included orientation metaphors (e.g., "Let me rise as larks harmoniously" and "Why should we only toil, the roof and crown of things"), metaphors of size (e.g., "Slums as big as doom"), metaphors of space (e.g., "All of their time and space are foggy slums"), metaphors of spatial dimensions (e.g., "Thou art long . . . as is the ribbed sea-sand"), and structural metaphors (e.g., "the ebb and flow of human misery"). In the case of nonspatial metaphors, the judges discussed instances of disagreement and eliminated metaphors from the tally when they were unable to reach agreement. The final interjudge agreement for nonspatial metaphors was about 90%. A more liberal procedure was adopted in the case of the relatively infrequent spatial metaphors; any topic or vehicle considered spatial by either judge was included in the tally.

Results and Discussion

According to the judges, the poems contained 864 live metaphors. Table 2 shows the relative frequency of spatial versus nonspatial topics and vehicles. Only 4% of the sample was judged to have spatial topics or vehicles (see Table 2 for examples). In the vast majority, the topics and vehicles were nonspatial: emotions, ideas, time, colors, sounds, touch, movements, things, and, as we will see, persons. Table 2 shows the relative frequency of person versus nonperson topics and vehicles. As can be seen there, about 3% of the vehicles were ambiguous or indeterminate as to humanness. An example is "the jungle crouched, humped in silence," in which the vehicle *crouching* can characterize either a person or an animal. As the concluding section of the article points out, these ambiguous examples should almost certainly be counted as personifications, but I deliberately excluded them here in order to obtain a conservative estimate.

Personifications (nonperson topic–person vehicle; e.g., "The thunder spoke") accounted for 43% of the remaining sample. Nonperson–nonperson metaphors, in which both the topic and vehicle are nonpersons (e.g., "A poem should be palpable and mute/As a globed fruit"), accounted for 36%. Person–nonperson metaphors, in which the topic is a person and the vehicle is a nonperson (e.g., "An aged man is but a paltry thing/A tattered coat upon a stick"), accounted for 13%. Finally, person–person metaphors, in which both the topic and vehicle are persons (e.g., "Then felt I like some watcher of the skies"), accounted for 4%.

Overall, persons were more likely to be the vehicle (47%) than the topic (18%), whereas nonpersons were more likely to be the topic (79%) than the vehicle (49%), differences reliable at the .001 level, $\chi^2_{(1)} = 356.19$. This finding corroborates Smith, Pollio, and Pitts (1981), who examined historical trends in figurative usage over the past 300 years of American prose and

TABLE 2
The Relative Frequency (to Nearest %) for Topics and Vehicles in Study I

PERSON VERSUS NONPERSON TOPICS AND VEHICLES

	Type of Vehicle			
Type of Topic	*Person*	*Nonperson*	*Indeterminate*	*Total*
Person	4	13	0	18
Nonperson	43	36	3	82
Total	47	49	3	100

Examples

Person–Person	Then felt I like some watcher of the skies.
Person–Nonperson	An aged man is but a paltry thing/A tattered coat upon a stick.
Nonperson–Person	Oh I was young and easy in the mercy of his means/Time held me green and dying.
Nonperson–Nonperson	A poem should be palpable and mute/As a globed fruit.

SPATIAL VERSUS NONSPATIAL TOPICS AND VEHICLES

	Type of Vehicle		
Type of Topic	*Spatial*	*Nonspatial*	*Total*
Spatial	1	0	1
Nonspatial	3	96	99
Total	4	96	100

Examples

Nonspatial–Spatial	The silence sank like music on my heart.
Spatial–Spatial	Thou art long . . . as is the ribbed sea-sand.

found that personification was the most frequent metaphoric device in virtually every epoch.

The present findings also fit Lakoff and Johnson's (1980) view that the purpose of metaphors is to relate a poorly understood (complex, vague, or abstract) concept (the topic) to a better understood (simpler, clearer, or more concrete) concept (the vehicle) in the hopes of gaining better understanding of the less well understood concept. Because person concepts are familiar and highly articulated, they are more likely to be vehicles than topics of a metaphor. Similarly, because nonperson concepts are distant and less well understood, they are more likely to be topics than vehicles of a metaphor. Lakoff and Johnson's (1980) conclusions are in turn part of Sperber's law (as discussed in Smith et al., 1981). Under Sperber's law, problematic concepts (including those that provoke intense feelings and those that are poorly understood) tend to become topics of metaphors, and unproblematic concepts (including those that are emotionally resolved and well understood) tend to become vehicles. The present results therefore extend Sperber's law from everyday speech (Lakoff & Johnson, 1980) and prose (Smith et al., 1981) to poetry.

The present data do not support the hypothesis that spatial thinking is prototypical or that it underlies most metaphors. That spatial metaphors (nonspatial topic–spatial vehicle) were so infrequent relative to personifications and other metaphors suggests that spatial thought may represent a relatively minor means of generating new or unconventional metaphors in adult poetry. This is not to say that spatial thought is infrequent or atypical *in general*. Perhaps spatial metaphors are so prevalent in everyday thought that poets avoid them as too conventional for use in creative poetry. Under this hypothesis, we might expect spatial metaphors to be much more frequent in literature written for children, who have yet to learn what is prototypical, conventional, and cliché. Study II was designed to test this prediction.

STUDY II: PERSONIFICATION AND SPATIAL METAPHORS IN CHILDREN'S LITERATURE

Study II examined the frequency of personification and spatial metaphors in poetry written for children. I was especially interested in the question of whether some types of metaphors are relatively more frequent in literature written for children versus adults.

The corpus. The corpus consisted of all 177 nursery rhymes (approx. 7,630 words) in Johnson, Sickels, Sayers, and Horovitz's *Anthology of Children's Literature, 5th Edition* (1977). This anthology is even more extensive than Gordon (1968) and is likewise highly respected and widely used (see

MacKay & Konishi, 1980a). The same two judges independently read the nursery rhymes and recorded all the live metaphors. The topic and vehicle of each metaphor were then classified as person versus nonperson and spatial versus nonspatial. As before, the rare cases in which the judges disagreed in their classification of personifications were discarded from the sample. The overall interjudge agreement was about 88%.

Results and Discussion

According to the judges, the nursery rhymes contained 111 live metaphors comparable in figurativeness to those in the adult literature. Table 3 shows the relative frequency of spatial versus nonspatial topics and vehicles. Over 99% of the metaphors were judged to have nonspatial topics and vehicles. Only one example involved space in any way at all: "A house as big as the sky."

Table 3 also depicts the relative frequency of person versus nonperson topics and vehicles. As shown, personifications (nonperson topic–person ve-

TABLE 3
The Relative Frequency (in %) for Topics and Vehicles in Study II

PERSON VERSUS NONPERSON TOPICS AND VEHICLES

	Type of Vehicle		
Type of Topic	*Person*	*Nonperson*	*Total*
Person	0	13	13
Nonperson	77	10	87
Total	77	23	100

Examples

Person–Nonperson	What are little girls made of? Sugar and spice and everything nice.
Nonperson–Person	The cat came fiddling out of the barn/With a pair of bagpipes under her arm.
Nonperson–Nonperson	With halls as white as milk.

SPATIAL VERSUS NONSPATIAL TOPICS AND VEHICLES

	Type of Vehicle		
Type of Topic	*Spatial*	*Nonspatial*	*Total*
Spatial	1	0	1
Nonspatial	0	99	99
Total	1	99	100

Example

Spatial–Spatial	A house as tall as the sky.

hicle, e.g., "And the cat came fiddling out of a barn/With a pair of bagpipes under her arm") made up 77% of the sample. Nonperson–nonperson metaphors (in which both the topic and vehicle are nonpersons) accounted for 10%, and person–nonperson metaphors accounted for the remaining 13%. Examples from this latter category included animalizations such as "What are little boys made of? Frogs and snails and puppy dogs' tails" and reifications such as "What are little girls made of? Sugar and spice and everything nice.'"

Overall, then, persons more often appeared as vehicles (77%) than as topics (13%), whereas nonpersons more often appeared as topics (87%) than as vehicles (23%). As in Study I, these differences were reliable at the .001 level ($\chi^2_{(1)} = 162.49$).

Interestingly, however, personification made up a higher proportion of children's metaphors (77%) than of adult metaphors (43%); this difference in relative frequency was significant at the .001 level, $\chi^2_{(1)} = 41.74$. Moreover, this difference was confined to personifications. A nonsignificant trend in the *opposite* direction is evident in the spatial metaphors (0% for the children's sample vs. 3% for the adult's sample). If this same developmental difference were to appear in more extensive samples of conventional as well as figurative metaphors, one might argue that personifications represent the prototypical metaphor and that they occur more frequently than any other class of metaphors and especially frequently during the earlier stages of child development.

What accounts for the increased relative frequency of personification in poetry written for children? Sperber's law provides the simplest explanation: Personifications enable children to use familiar (person) concepts to understand other, less familiar (nonperson) concepts—the basic purpose of metaphors. As expected under this hypothesis, children learn person concepts before nonperson concepts. For example, they learn movement concepts associated with their own actions before they learn concepts associated with the actions of things (Huttenlocher, Smiley, & Charney, 1983). Indeed, the basic person concept is probably innate. Human infants display a seemingly built-in interest in the appearance of the human face and in the sound of the human voice (Miller & Johnson-Laird, 1976). Moreover, there are no universal nonperson concepts, but the concept of the person spans all cultures (Miller & Johnson-Laird, 1976).

The greater familiarity of person concepts also explains the predominance of personification in the adult sample of Study I. However, adults already have mastered large numbers of nonperson concepts that they can use to understand other, newly encountered nonperson concepts. The relative frequency of nonperson–nonperson metaphors can therefore be expected to increase as a function of age, which represents one reason for the increased frequency of nonperson–nonperson metaphors in the adult sample.

However, Sperber's law may not be the only reason for the increased frequency of personification in children's literature. I observed two basic differences in the content of adult versus children's personifications that may have played a role as well. First, sex rarely became specified in the adult personifications, and, when it did, it only rarely seemed to convey a sex-role stereotype, as in the children's literature (MacKay & Konishi, 1980a). Second, animal personifications made up the majority of the children's metaphors but were virtually nonexistent in the adult sample. In the following section, I suggest some possible reasons for these differences and how they may have contributed to the increased relative frequency of personification in the children's sample.

Why Are Animals Personified in Children's Literature?

As MacKay and Konishi (1980a) point out, animal personifications in children's literature typically express sex-role stereotypes. This general pattern raises two questions: Why are sex-role stereotypes expressed figuratively rather than directly?; Why are they expressed through the personification of animals more often than through any other metaphoric comparison?

Why not directly? Animal personifications can be seen as an exceptionally concise, readily imaged, and easily remembered means of communicating sex-role stereotypes, with advantages over direct expression both as a means of communication and as a means of shaping thought. For example, children can readily image and remember that the Big Bad Wolf is evil, cunning, and male. However, expressed directly, the message that "Evil, cunning, bigness, and maleness tend to go together" is much less vivid and memorable. Moreover, animal personifications are interesting in a way in which direct expressions are not. Children's stories resemble masquerades in which the goal is to see through the animal disguises to the human beings underneath. For adults, the disguise may wear rather thin, but for children the mental unmasking probably entails some degree of excitement and emotional involvement. This emotional involvement may in turn be related to the fact that children dream about animals (especially personified animals) much more frequently than do adults. Van de Castle (1970) found that animals appeared in 61% of the dreams that 4-year-old children report, but in only 7.5% of the dreams that adults report.

Animal personifications also provide a more effective means of shaping thought than direct expressions do. A direct expression such as "Evil, cunning, bigness, and maleness go together" is hard to believe because counterexamples come readily to mind. The direct expression also raises difficult-to-answer questions such as "Why do evil, cunning, bigness, and maleness go together?" However, animal personifications have a fable-like quality that

inspires suspension of disbelief and that makes it difficult to question the underlying message. "Why is the wolf evil, cunning, big, and male (like all other fairy tale wolves)?" can too readily be answered with "*He* just is."

Why not other metaphoric comparisons? Other metaphoric comparisons can and have been used to express sexual stereotypes. Classical examples are animalization ("What are little boys made of? Frogs and snails and puppy dog's tails") and reification ("What are little girls made of? Sugar and spice and everything nice"). Why, then, is animal personification so much more frequent than these other types of comparison? One hypothesis is that the personification of animals carries an additional underlying message that is missing in other metaphors. The message is that sex-role characteristics are so basic and so general as to apply not just to humans but to all other species of the animal kingdom. It seems certain that most children acquire this message; they are quite surprised to learn that the reverse of the stereotypical sex-role characteristics apply to the males and females of some species. Indeed, some people may never completely abandon the original message. For example, one implication of the personification message is that sex-role stereotypes have a fundamental physiological or genetic basis, an assumption many people carry without question well into adulthood (Sayers, 1982). In communicating with one another, however, adults generally assume, rather than openly express, the long since overlearned sex-role stereotype of their culture, which explains why adult metaphors in Study I rarely conveyed either sex or sex-role stereotypes, in contrast to the children's metaphors in Study II.

In summary, Study II observed a developmental difference in the likelihood of exposure to personifications and it developed two complementary hypotheses for explaining this difference. Limitations of the present procedures, however, must be stressed for future tests of these hypotheses. Adults write the literature for children and often read it to them as well; Study II was based on the assumption that adults modulate the complexity of what they say and write to match the developmental stage of the child. Some justification for this assumption appears in MacKay (1976) and elsewhere in the developmental literature, but further research is needed to determine whether the modulation assumption holds for personifications in children's literature.

PERSONIFICATION IN DISGUISE

The present data suggest that anthropomorphic thinking is very common. Moreover, I have almost certainly underrepresented the true frequency of personification, which often becomes disguised in subtle ways that are diffi-

cult to measure. The idea of personification in disguise is not new. For example, Piaget (1979) argued that our understanding of the concept of causation originates as a form of personification; once children become adept at manipulating, dropping, and throwing everyday objects, they project these early experiences of personal causation onto the objects and events that they later see influencing one another in the external world. How far into adulthood Piaget's disguised personification extends is currently unknown, but I discovered personification masquerading as causation in several classes of adult metaphors discussed below. I also found personification lurking beneath many other aspects of human cognition, including the syntax of English and the fundamental frameworks of Western thought.

Ambiguous Cases

The ambiguous cases of Study I represent the simplest examples of personification in disguise. Actions that can be performed by either humans or animals provided the basis for about 3% of the metaphors in Study I. Examples (1)a–f illustrate such actions:

(1) a. This house *is eating up* our savings.
b. Cancer finally *caught up with* him.
c. Their experiment *gave birth to* a new theory.
d. Poverty *attacks* the foundation of our society.
e. Turbulence *has outwitted* the best of physicists.
f. Marriage *has destroyed* my happiness.

However, even though animals do *eat up, catch up with, give birth to, attack, outwit,* and *destroy,* humans typically and most saliently do these things in everyday experience. These examples therefore seem more likely to involve a figurative person than a figurative animal for producers and perceivers alike.

This hypothesis becomes even more plausible when these same actions become attributed to a topic that commonly and unambiguously undergoes personification. For example, the topic *inflation* undertakes these ambiguous actions in (2)a–f but becomes unambiguously personified in otherwise parallel instances such as (2)g and h.

(2) a. Inflation *caught up with* us.
b. Inflation *ate up* our profits.
c. Inflation *gave birth to* a new economics.
d. Inflation *attacked* our ability to export.
e. Inflation *outwitted* our best economists.
f. Inflation *destroyed* our company.
g. We need to *combat* inflation.
h. Inflation *calls for sacrifices* from everyone.

These well-known, unambiguous cases suggest that the other ambiguous cases must be personifications as well.

Word Order

Cooper and Ross (1975) argued that word order in many expressions originated metaphorically, with the prototypical person (the self) as the vehicle. We typically think of the self as functioning in an *upright* position, as moving *forward*, as being *active* and basically *good*, as being *here* (rather than *there*), and as existing *now* (rather than *then*). This stereotype of the self provides the basis for what Cooper and Ross (1975) called the "me-first" order in many idiomatic expressions such as *up and down, front and back, active and passive, good and bad, here and there,* and *now and then*; the first parts of these expressions point toward the prototypical person, and the second parts point away from the prototypical person. If this account is correct, these word orders originated as a form of personification in disguise.

Container Metaphors

As Lakoff and Johnson (1980) pointed out, container metaphors pervade everyday English. We say "He's in love" or "He's in trouble," as if psychological states such as *love* and *trouble* were containers that we can enter or leave (see (3)a–d for additional examples). However, persons may be the prototypical containers in human cognition, and a metaphoric person may represent the underlying container that holds, consumes, or spits out these psychological states. For example, all these psychological states are personified in (3)e: If *love, trouble, catatonia, depression, anger,* and *addiction* are to consume someone, these states must be persons.

(3) a. He *fell into* a fit of rage.
b. He's *out of* trouble.
c. He *entered* a state of euphoria.
d. He *emerged from* his state of catatonia.
e. Love (trouble, catatonia, euphoria, depression, addictions) *consumed* him.

Examples (4)a–g provide additional illustrations of psychological states masquerading as people. The preponderance of such examples raises the questions of whether the original container metaphors may reflect personification in disguise.

(4) a. It's a *tired* affair.
b. Her emotions are *recuperating* from the divorce.

c. This is a *sick (healthy)* relationship.
d. We're getting *back on our feet* again.
e. His feelings are *in good shape.*
f. They have a *strong (shaky)* relationship.
g. They have a *listless* marriage that's *on its last legs.*

Container metaphors are also used to express our everyday concepts of making, changing, and creating things. In (5)a–c, for example, people must think of *clay, gold* and *rubble* as containers:

(5) a. She created it *out of* clay.
b. He changed it *into* pure gold.
c. They turned the city *into* rubble.
d. The Depression *gave birth to* World War II.

However, the concept of *birth* provides the typical metaphor for making, changing, and creating things. Examples such as (5)d are so common as to suggest that the concept of *creativity* is grounded in the experience of birth. As Lakoff and Johnson (1980) pointed out: "In birth, an object (the baby) comes out of a container (the mother). At the same time, the mother's substance (her flesh and blood) are in the baby (the container object). The experience of birth . . . provides a grounding for the general concept of CREATION, which has as its core the concept of MAKING a physical object but which extends to abstract entities as well" (p. 74). This being the case, these extensions represent further instances of personification in disguise.

Expressions of Instrumentality

A similar line of evidence suggests that personification in disguise may underlie expressions of instrumentality. Familiar instruments, tools, or machines frequently become personified as companions (e.g., "This car and I have seen a lot of country together"). (See (6)a–c for additional examples.)

(6) a. The magician and his magic harmonica *are performing* tonight.
b. This suitcase and I *have seen* all of Europe.
c. Me and old *Betsy* (my gun) are going to *track* him *down.*

As Lakoff and Johnson (1980, p. 134) pointed out, this tendency to think of instruments as personal companions may explain a curious consistency in the syntax of English and many other languages: using the preposition *with* to convey instrumentality. Thus, *with* can be used to refer to a human companion (e.g., "Rampal went on tour with a friend"), a personified companion ("Rampal went on tour with his flute"), and an unpersonified instrument

("Rampal sliced the bread with a knife"), not just in English but in many other languages as well. The consistent emergence of these parallels in so many languages suggests that using *with* to express instrumentality is no accident and constitutes another instance of personification in disguise.

Metonymy

In metonymy, one entity is used to refer to a related entity. An example is "He bought a new *set of wheels*" *(wheels* refers to the entire *car)*. Sometimes, however, distinguishing metonymy from personification is difficult. In "Acrylic has taken over the art world," *acrylic* acquires human properties even though the author of the sentence clearly means "the use of acrylic" (see (7)a–d for additional examples). Given the prototypicality of personification, such examples again suggest personification in disguise.

(7) a. He (his car) hit me (my car).
b. I.B.M. has taken over the computer world.
c. Seattle called.
d. The Times hasn't arrived at the press conference yet.

Nominal Gender-Marking

Nominal gender-marking refers to nouns' carrying inherent genders in languages where pronouns, adjectives, and determiners must agree in gender with their corresponding nouns. For example, all nouns in German are either masculine, feminine, or neuter; in requesting a knife, fork, or spoon, speakers must use the masculine pronoun *(he)* for the spoon, the feminine pronoun *(she)* for the fork, and the neuter pronoun *(it)* for the knife.

These nominal gender categories increase communicative accuracy by reducing the set of possible referential alternatives for the listener. For example, if we say "Give us that (female) one" in German, the listener knows that we must be referring to the fork, rather than to the knife or the spoon. However, the genders of particular nouns differ across different languages. In French, for example, *knife* and *child* are masculine and *girl* is feminine, whereas all three are neuter in German. These seemingly arbitrary cross-language differences provide the basis for the currently prevailing view that gender-marking carries no communicative significance (Bock, 1982).

An alternative view holds that nominal gender-marking represents an instance of personification in disguise and that it may profoundly influence the attitudes of speakers toward external objects and ideas. According to this view, speakers of French are obliged to personify *time* and *the sun* as male *(le temps* and *le soleil)* but *old age* and *the moon* as female *(la viellese* and *la lune)*. Now, as this is the same pattern that MacKay and Konishi (1980a) ob-

served for the optional personifications in English literature, these French gender-markings may convey identical attitudes under this hypothesis—that is, time and the sun are powerful and in control (as the stereotypical male is), whereas old age and the moon are passive, soft, and weak (as the stereotypical female is).

In this view, then, metaphoric gender categories use familiar sex-role attitudes to highlight specific aspects of a complex nominal concept. The highlighting is subtle and connotative in nature, and different language-cultures can choose to highlight different aspects of these complex concepts. This explains why different languages display different nominal gender markings. For example, unlike French, German obligatorily personifies *time* and *the sun* as female, *the moon* as male. Compared with the French gender personifications, these German personifications highlight different aspects of the corresponding concepts and promote a different set of underlying attitudes (e.g., *time* and *the sun* are nourishing and life-giving, as is the stereotypical female, whereas *the moon* is connected with darkness and evil, as is the stereotypical male). Moreover, such attitudes may become transferred not just to *time, the sun,* and *the moon,* but also to persons (as in the case of young children first learning both the language and the sex-role stereotype).

In short, if nominal gender-marking is another instance of personification in disguise, it may help to pass on a set of culture-specific sex-role attitudes. Nominal gender-marking may also enable children to transfer habitual attitudes from their interpersonal world to the world of ideas and things and may thereby enable the child to relate in a familiar and personal way to newly encountered concepts and objects.

Spatial Metaphors

If, as MacKay and Konishi (1980a) suggested, sex-role stereotypes underlie the consistencies in personifications, I wondered whether a similar stereotype might also underlie the consistencies in spatial metaphors (see Table 1). For example, the HAPPY IS UP class of metaphors may reflect an underlying stereotype such as "Happiness implies an upward gesture of the mouth (smiling)," and the SAD IS DOWN class may reflect a converse stereotype such as "Sadness implies a downward gesture of the mouth." A related hypothesis stems from the fact that the body typically becomes erect during positive emotional states but droops during sadness and depression (from Lakoff and Johnson, 1980). Further research is needed to distinguish these hypotheses, but it is interesting that both hypotheses explain the consistencies as a form of personification in disguise.

The idea of personification in disguise also makes sense of other consistencies that Lakoff and Johnson (1980) observed in spatial metaphors. Table 4(a) illustrates eight additional sets of orientation metaphors from Lakoff

TABLE 4

Examples of Spatial Metaphors and Other Instances of Personification in Disguise

(a) *Spatial Metaphors*

CONSCIOUS IS UP; UNCONSCIOUS IS DOWN.

Get *up.* Wake *up.* He *fell* asleep. He *dropped* off to sleep. He's *under* hypnosis.

CONTROL (FORCE) IS UP; SUBJECT OF CONTROL (FORCE) IS DOWN.

I have control *over* that. I'm *on top of* the situation. He's in the *upper* echelon. His power *rose.* He *fell* from power. He is *low* man on the totem pole.

HIGH STATUS IS UP; LOW STATUS IS DOWN

She *rose* to the top. He's a social *climber.* She has *upward* mobility. He *fell* in status. She's at the *bottom* of the social hierarchy.

RATIONAL IS UP; EMOTIONAL IS DOWN

We had a *high level* intellectual discussion. We *raised* the discussion *back up* to a rational plane. The discussion *fell* to the emotional level. He couldn't *rise above* his emotions.

(b) *Theories Disguised As People*

His theory *gave birth to* many new ideas.
Look at what his theory has *spawned.*
That theory *died off* in the Middle *Ages.*
Where did you *dig up* that theory?
He *breathed new life into* the theory.
Her theory will *live on* forever.
Phrenology is the *father* of neuropsychology.
Whose *baby* (brainchild) is that?
He *resurrected* the theory.

(c) *Ideas About People Disguised As Theory*

Objectivist (Masculine) Traits	*Subjectivist (Feminine) Traits*
Objective	Subjective
Independent	Dependent
Active	Passive
Universal	Relative
Rational	Emotional
Precise	Imprecise
Clear	Unclear
External	Internal
Logical	Intuitive
Reason	Imagination
Impersonal	Personal
Impartial	Biased
Truth	Art
Artificial	Natural
Science	Religion
Independent	Interactional
Public	Private
Power	Impotence
Knowledge	Feeling

and Johnson (1980): CONSCIOUS IS UP, UNCONSCIOUS IS DOWN; CONTROL IS UP, SUBJECT OF CONTROL IS DOWN; HIGH STATUS IS UP, LOW STATUS IS DOWN; RATIONAL IS UP, EMOTIONAL IS DOWN. Lakoff and Johnson (pp. 15–17) suggest that the basis for these metaphors lies in a heterogeneous set of stereotypically human characteristics such as the following: UNCONSCIOUS IS *DOWN* because we are typically lying *down* when we are unconscious or asleep; CONSCIOUS IS *UP* because we can stand *up* when conscious; CONTROL (FORCE) IS *UP* because physical force typically correlates with *height*, and the victor in a fight is typically *up* or *on top;* HIGH STATUS IS *UP* because status is correlated with power, and power is *up;* finally, RATIONAL IS *UP* because human beings are rational and have control *over* animals, plants, and the physical environment. Thus, CONTROL IS UP "provides a basis for MAN IS UP and therefore for RATIONAL IS UP" (Lakoff & Johnson, 1980, p. 17).

The prototypicality of personification, however, suggests an alternative explanation of these metaphors in terms of a much simpler and more prevalent sex-role stereotype. According to this stereotype, men are stronger than women, so that MAN IS UP and WOMAN IS DOWN (for reasons similar to those discussed previously for FORCE IS UP). Now, because men are stereotypically considered rational, conscious thinkers who have high status and are in control, it follows that RATIONAL, CONSCIOUS, HIGH STATUS, and CONTROL ARE UP. Similarly, because women are stereotypically considered emotional, unconscious or intuitive thinkers who have low status and are subject to control, it follows that EMOTIONAL, UNCONSCIOUS, LOW STATUS and SUBJECT TO CONTROL ARE DOWN. According to this view, a single stereotype provides the basis for all eight classes of metaphor.

Theories Disguised As People and Vice Versa

Ideas, theories, and systems of ideas often become personified, as in "His theory *gave birth to* many new ideas" (see Table 4(b) for additional examples), and personification in disguise sometimes pervades the theories, ideas, and systems of ideas themselves. Consider, for example, the concepts of *objectivism* and *subjectivism,* idea systems that have played a central role in Western thought since the time of the Greeks. Lakoff and Johnson (1980) discussed these concepts in detail and consistently personified them – for example, "Objectivism and subjectivism *need* each other in order to exist. Each *defines* itself in opposition to the other and *sees* the other as the *enemy*. Objectivism takes as its *allies* . . ." (p. 189, emphasis mine). The question in the present study, however, concerned what *type* of person is reflected in these two systems of thought. Is a sex-role stereotype the basis for the dichotomy itself?

To answer this question, I simply listed the traits commonly associated with each system (from Lakoff & Johnson, 1980) and found that objectivism is considered objective, rational, precise, logical, impartial, and powerful, whereas subjectivism is considered subjective, dependent, passive, emotional, intuitive, personal, and lacking in power (see Table 4(c) for additional traits). It is surely no accident that, without exception, objectivism reflects the traits of the stereotypical male, whereas subjectivism reflects the traits of the stereotypical female (see the sex-role inventories of Bem, 1974, and of Broverman et al., 1972). Also, it is no accident that in Western culture these two systems have traditionally been considered the only possible alternatives, like the sexes they personify. And it is not perhaps surprising that subjectivism has become the dominant mode of thought in "feminine" domains such as art, whereas objectivism remains the dominant mode of thought in "masculine" domains such as science, law, government, and business (Lakoff & Johnson, 1980). In short, not only can theories and ideas masquerade as people, but ideas about people can masquerade as theories and systems of thought pervading a great deal of our mental life.

To summarize, the present results suggest that personification may be the prototypical metaphor, which is more common than all other classes of metaphor, especially in the experience of children. If, as Lakoff and Johnson (1980) suggested, the conceptual system by which we perceive, think, and act is fundamentally metaphorical in nature, it should therefore come as no surprise that personification may enter into many other aspects of human behavior and cognition.

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