

PERSONIFICATION AND THE PRONOUN PROBLEM

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Synopsis—The research investigated the use of human pronouns to refer to nonhuman antecedents. Study I examined a large sample of children's literature and found that authors were more likely to use *he* or *she* rather than *it* for referents with human traits, for unique or named rather than unnamed referents, and for characters central rather than peripheral to the story. Social stereotypes played a role in the choice of *he* vs *she* since antecedents of *he* tended to be strong, active, brave, wise, clever, and mischievous, while antecedents of *she* tended to be weak, passive, and foolish.

Study II employed a sentence completion task to examine experimentally a 'pronoun switching' phenomenon found in Study I. The results indicated that pronouns are not chosen simply to agree in person, number, and gender with their antecedents, but that underlying attitudes toward and antecedent play a critical role in pronoun choice. Implications of the results are discussed for theories of language evolution, for metaphor and metaphoric thought, for the relation between sexism in personification and other areas of the language, and for ways that sexist language can be avoided in children's literature and literature in general.

The present study examined the phenomenon of personification, a metaphoric device which is especially common in children's literature. We had several reasons for an interest in personification. One was a concern over sexist stereotypes: how children come to learn them and how they can be avoided in children's literature. Personification provides a powerful vehicle for teaching sexist stereotypes. When a timid, helpless, and hysterical mouse is personified as female, the subtle message that children receive is that females can be expected to behave in a timid, helpless, and hysterical manner. Likewise, when a courageous, clever, and powerful lion is personified as male, the message that children get is that males can be expected to behave in courageous, clever, and powerful ways. Such messages are all the more insidious because of their prevalence in some of our oldest, most popular and most prestigious children's literature. Their propaganda value is further augmented by being conveyed to children who are not in a position to question such messages. Even adults have difficulty questioning these messages since personifications present their stereotypes indirectly as if they were a matter of common and well-established knowledge which no one in their right mind would question. And even when questioned, intentions underlying personifications are sufficiently ambiguous or inferential in nature that it is invariably possible to sidestep the stereotyping underlying the female mouse or male lion and rationalize the personification on the basis of some other dimension such as say, characteristic size.

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The present study also explored relations between personification and limitations of the English pronoun system. The only English pronoun for referring unambiguously to a generic animal (with irrelevant, unknown, or indeterminate sex) is *it*. But *it* carries object status connotations because of its primary function in referring to things, so that a person pronoun must be used when expressing intimacy or personal involvement with an animal. This raises the second limitation, namely that English lacks a generic pronoun for referring unambiguously to a generic person. As a consequence, we cannot personify animals without signalling sex—one of the bases for the stereotyping discussed above. A corollary limitation is that English pronouns cannot indicate the sex of animals without signalling personhood. As a consequence, we cannot tell if any given use of *he* or *she* for animals is meant to signal sex, personification, personal involvement, or some combination of these three.

Under one hypothesis, personification is intimately connected to limitations of the pronoun system and provides a model for sexism in other areas of the language. Specifically, contemporary speakers attempt to overcome the generic pronoun limitation by using *she* for predominantly female classes such as *nurse* or *secretary*, and *he* for predominantly male classes such as *doctor* or *lawyer* (see Martyna, 1978). McConnell-Ginet (1979) argued that these uses of *she* and *he* serve to 'personify' these classes or convey a concrete image of a prototypical person within the class. An underlying 'need' to personify also explains the use of *he* for neutral classes such as *person* or *pedestrian*, according to this pronominal prototype hypothesis. This being the case, an understanding of personification may carry significance extending far beyond children's literature and may help determine how to avoid stereotyping in the language at large.

What determines the choice of pronouns for designating nonhuman antecedents? One widely accepted basis for pronoun choice is the surface agreement rule: that pronouns agree in number, gender, and person with their antecedents in the surface structure of a sentence. The present study examines the use of *he*, *she* and *it* both descriptively and experimentally and argues that this surface agreement rule is wrong and that pronouns are selected on the basis of psychologically deep attitudes toward the antecedent.

STUDY I: A DESCRIPTIVE STUDY OF PERSONIFICATION AND PRONOUN CHOICE

Study I systematically described references to nonhuman antecedents using *he*, *she*, and *it* in a large and widely read sample of children's literature. The goal was to determine what factors were responsible for the choice of *he* vs *she* vs *it* and to determine the exact nature of the sex stereotyping which often results and its possible social and psychological effects on children.

Method

Materials. In order to obtain a sample covering a wide range of children's literature, we examined a general anthology, Johnson *et al.*'s *Anthology of children's literature*, 5th Ed (1977). First published in 1935, Johnson *et al.*, is highly regarded in the field and is widely used for classes in children's literature. Many of the works included in Johnson *et al.* are familiar and enduring classics, but distinguished contemporary stories are included as well. The 1180 pages of Johnson *et al.* contained selections from 6 picture books (with minimum text and extensive art work), 441 poems (177 nursery rhymes, 45 nonsense verses, 219 contemporary poems), 174 selections from traditional literature (35 fables, 89 folk tales, 32 myths and legends, 18 epics and romances), 53 more recent selections (29 fantasies, 24 realistic stories),

and 33 selections from informational literature (biography, travel, history, and science). There were 520 authors: 42 per cent men, 18 per cent women, and 40 per cent anonymous or sex unknown.

Procedure. One investigator (T. K.) read the entire anthology, noted the instances of *he*, *she*, and *it* (approximately 35,000 altogether), and recorded the pronouns referring to non-human antecedents. All cases of the pronouns were recorded, but for simplicity's sake, *his*, *him*, and *himself* will be assumed under *he*; *hers*, *her* and *herself* under *she*; and *its* and *itself* under *it*.

Results

Table 1 compares the number of different antecedent classes (e.g. *crow*) and the number of unique antecedents (e.g. *Johnny Crow*, *Mrs. Crow*, *crow*) referred to with *he*, *she*, or *it*. It also categorizes the data by nature of the antecedent: animals (including real, imaginary, and toy animals), fantasy creatures (including imaginary beings such as fairies, ghosts, giants, and trolls), and things (including abstractions such as thought and time). Table 1 compares the use of *he* vs *she* for things, but not *it* which is so commonly used with things

Table 1. The corpus: number of antecedent classes and antecedent instances referred to with *he*, *she*, or *it*

	Total	Pronoun used					
		<i>he</i>		<i>she</i>		<i>it</i>	
Nature of antecedent	<i>N</i>	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Animals							
Antecedent classes	214	103	48	42	20	69	32
Antecedent instances	452	279	62	90	20	83	18
Fantasy creatures							
Antecedent classes	18	14	78	3	17	1	6
Antecedent instances	34	23	68	10	29	1	3
Things							
Antecedent classes	37	19	51	18	49	—	—
Antecedent instances	59	34	58	25	42	—	—

as to obscure the comparison. As can be seen in Table 1, *he* was used more frequently than *she* or *it* for animals and fantasy creatures and more frequently than *she* for things. This difference between *he* vs *she* (excluding *it*) was most pronounced for animals (76 per cent vs 24 per cent) and fantasy creatures (70 per cent vs 30 per cent) and least pronounced for things (58 per cent vs 42 per cent). Moreover, instances of *he* (approximately 4.5 pronouns per antecedent) were more common than *she* (approximately 3.2 pronouns per antecedent), or *it* (approximately 2.2 pronouns per antecedent).

The remaining results are organized around six variables related to the choice of *he* vs *she* vs *it*: personification, specificity, centrality, nature of the antecedent, nature of the attributes, and pronoun switches.

Personification. This section examined relations between personification and pronoun choice (*he* vs *she* vs *it*). Following Shaw (1972, p. 283), we defined personification to occur 'whenever abstractions, animals, ideas, and inanimate objects are endowed with human form, character, traits, or sensibilities.' As such, personification is theoretically independent of pronoun choice and in fact, occurs with either *he* (e.g. 'And the rat wore a feather in *his*

hat'), *she* (e.g. 'A widow bird sat mourning for *her* love'), *it* (e.g. 'The rabbit actually took a watch out of *its* waistcoat-pocket'), or no pronoun (e.g. 'The stork gave a philosophic talk'). Moreover, human pronouns are sometimes used in the absence of personification, as in 'I bought a little horse that galloped up and down, I bridled *him* and saddled *him*.'

Since sex and personhood are completely confounded within the present system of third person pronouns, it is conceivable that use of *he* or *she* for animals engaged in species-characteristic activities signals sex or personal involvement rather than personhood or personification. However, the data showed that use of *he* and *she* was closely associated with personification. Table 2 shows the frequency of *he* and *she* vs *it* for personified vs non-personified antecedents. Because of the conventional nature of the use of *it* in reference to things, the *it* data only included antecedents that were sometimes referred to with *he* or *she*. As can be seen in Table 2, use of *he* and *she* was more common for personified than non-personified antecedents (93 per cent vs 64 per cent) whereas use of *it* was more common for non-personified than personified antecedents (36 per cent vs 7 per cent), a difference significant at the 0.001 level ($\chi^2_{(1)} = 77.98$).²

Table 2. The use of *he* and *she* vs *it* for personified vs non-personified antecedents

	Total	Pronoun used			
		<i>he</i> and <i>she</i>		<i>it</i>	
Nature of antecedent	<i>N</i>	<i>N</i>	%	<i>N</i>	%
Animals					
Personified	234	219	94	15	6
Non-personified	218	150	69	68	31
Fantasy creatures					
Personified	34	33	97	1	3
Non-personified	0	0	0	0	0
Things					
Personified	59	53	90	6	10
Non-personified	26	6	23	20	77
Total					
Personified	327	305	93	22	7
Non-personified	246	156	64	88	36

Table 2 also categorized the antecedents as animals, fantasy creatures, and things and the pattern of results was similar for all three types of antecedent. Use of human pronouns was most frequent for fantasy creatures (97 per cent), which were invariably personified, and least frequent for personified things (90 per cent), but the 10 per cent exceptions to the restriction of human pronouns to personified things were *she* ships and *he* suns, instances which might be considered conventional uses of *she* and *he*.

Specificity. This section investigated the relation between pronoun choice and specificity of the antecedent. Antecedents varied in specificity from generic instances (e.g. 'A bat is born naked and blind and pale'), to specific unnamed instances (e.g. 'About noon they saw a pretty show-white bird sitting on a bough'), to specific named instances (e.g. 'Blob the Whale'), to sex-definite names ('Peter Rabbit'), to names and sex-specific titles ('Mrs.

² Unless otherwise specified, all χ^2 tests were 2×2 tests of independence, and employed Yates' correction for continuity where necessary.

Furrynose'). Consistent with Stanley's (1977) claim that generic uses often represent specific uses in disguise, we found no difference in the pronoun use for generic (78 per cent human pronouns) vs specific antecedents (74 per cent human pronouns), which were combined in Table 3. The upper portion of Table 3 shows that *he* and *she* were used more frequently for named than unnamed antecedents (97 per cent vs 76 per cent), a difference significant at the 0.001 level ($\chi^2_{(1)} = 25.04$). This finding corroborates the conclusion of Marcoux (1973, p. 104) that 'the presence of a proper noun seems to encourage the use of either a masculine or feminine pronoun rather than the neuter form.'

Table 3. The use of *he* and *she* vs *it* for named vs unnamed antecedents, and sex specific vs sex indefinite antecedents

	Total	Pronoun used			
		<i>he</i> and <i>she</i>		<i>it</i>	
Nature of antecedent	<i>N</i>	<i>N</i>	%	<i>N</i>	%
Named	113	110	97	3	3
Unnamed	339	259	76	80	24
Sex-specific	94	88	94	6	6
Sex-indefinite	358	281	78	78	22

Sex-specific antecedents included instances with sex-specific names (e.g. *Johnny Crow*), and instances with names and sex-specific titles. As can be seen in the lower portion of Table 3, *he* and *she* were used more frequently for sex-specific (94 per cent) than sex-indefinite animals (78 per cent), a difference significant at the 0.001 level ($\chi^2_{(1)} = 11.55$). Some animals ($N = 30$), e.g. 'Mrs Furrynose', were doubly specific with a proper name and a sex-specific title, and this double specificity was reflected in the data as 100 per cent usage of human pronouns.

Nature of the antecedent. This section examined the relation between pronoun choice and the nature of the antecedent referred to (e.g. *dog* vs *cat*). We distinguished four types of antecedents: *he* antecedents ($N = 82$) were consistently referred to with *he* (or *he* in some instances and *it* in others) e.g. *bear*; *she* antecedents ($N = 21$), consistently with *she* (or *she* and *it*) e.g. *lark*; *it* antecedents ($N = 22$), consistently with *it* e.g. *calf*; and *he* or *she* antecedents ($N = 21$), with *he*, *she* or *it* e.g. *turkey*.

He animals seemed to differ from *she* animals in characteristic size: *he* animals were typically large mammals such as *lion*, *gorilla*, or *wolf*, whereas *she* animals were typically small birds or insects such as *ladybug* or *bee*. *It* animals were often immature members of the species such as *calf* or *kid*.

Moreover, we found striking differences in attitudes toward *he* vs *she* antecedents as determined from semantic differential data. Table 4 compared the semantic differential scores for the *he* vs *she* antecedents available in Heise (1971), who compiled semantic differential ratings for 1551 common English words. The scores in Table 4 represent means for each of three dimensions: evaluation (goodness vs badness), potency (strongness vs weakness), and activity (fastness vs slowness) and range from -3.0 to $+3.0$: zero representing theoretical neutrality; negative scores representing badness, weakness, and slowness; positive scores representing goodness, strongness, and quickness. As can be seen in Table 4, mean evaluation scores were similar for *he* and *she* antecedents (0.80 vs

Table 4. Semantic differential ratings for *he* vs *she* entities and their attributes and *he* vs *she* humans. See text for explanation

Nature of antecedent	Semantic differential dimensions		
	Evaluation	Potency	Activity
Animals			
<i>He</i> animals	0.58	0.92	0.98
<i>She</i> animals	0.15	-0.30	0.28
<i>He</i> attributes (birds)	0.68	0.61	0.49
<i>She</i> attributes (birds)	0.87	-0.07	0.19
Things			
<i>He</i> things	1.01	0.84	0.18
<i>She</i> things	1.37	0.79	0.10
<i>He</i> attributes	1.25	1.43	0.86
<i>She</i> attributes	1.50	0.61	0.39
Total entities			
<i>He</i> entities	0.80	0.88	0.58
<i>She</i> entities	0.76	0.24	0.19
<i>He</i> attributes	0.96	1.02	0.68
<i>She</i> attributes	1.18	0.27	0.29
Humans			
<i>He</i> humans	1.53	0.85	0.92
<i>She</i> humans	1.64	-0.32	0.73

0.76), whereas potency and activity scores were higher for *he* than *she* antecedents (0.88 and 0.58 vs 0.24 and 0.19).

This pattern can be described as covert stereotyping since it exactly matches the pattern for *he* vs *she* humans, also shown in Table 4. These data were likewise obtained from Heise and consisted of ratings for 13 male terms (e.g. *man*, *boy*, *husband*, *son*) and 13 female terms (e.g. *woman*, *girl*, *wife*, *daughter*). Evaluation scores were statistically equivalent but potency and activity scores were significantly higher for male than female terms ($p < 0.01$ and $p < 0.05$ respectively using a sign test with word pairs as unit of analysis).

Nature of the attributes. This section examined the attributes (usually adjectives) assigned to *he* vs *she* antecedents. *He* antecedents were often assigned a great variety of traits, e.g. *strong*, *brave*, *wise*, *clever*, *mischievous*, *angry*, *monstrous*, *wild*, *savage*, *furious*, whereas *she* antecedents often received very few traits, e.g. *weak*, *passive*, *foolish*, *poor*. And attributes assigned to *he* antecedents differed markedly from those assigned to *she* antecedents. *He* antecedents tended to be strong and active with traits such as *mischievous*, *angry*, *strong*, *mighty*, *great*, *savage*, *furious*, *deceitful*, whereas *she* antecedents tended to be weak and passive but good, with traits such as *sweet*, *poor*, *pretty*, *timid*.

To check these impressions, we examined the semantic differential ratings in Heise for attributes assigned to *he* vs *she* birds. We chose birds to obtain a sizeable number of instances ($N = 84$) while keeping constant the inherent nature of the antecedent. Repeated attributes were assigned a multiplicative weight based on frequency of occurrence. As can be seen in Table 4, evaluation scores were similar for *he* and *she* birds, whereas potency and activity scores were significantly higher for *he* than *she* birds ($z = 3.07$, $p < 0.001$, and $z = 2.35$, $p < 0.01$ respectively). A similar pattern was found for *he* vs *she* things (see Table 4). This pattern matches the pattern of attitudes toward male vs female humans discussed above and can be termed overt stereotyping since the stereotypic traits are assigned directly to *he* vs *she* antecedents rather than indirectly through the inherent concept of the antecedent.

Two additional analyses of the attributes assigned to *he* vs *she* antecedents corroborated

this conclusion. In these analyses, the attributes were classified as either stereotypically male or stereotypically female using the sex-role inventories of Bem (1974), and Broverman *et al.* (1972). Using the Bem inventory, attributes assigned to *he* antecedents were more often stereotypically male than stereotypically female (86 per cent vs 14 per cent) while attributes assigned to *she* antecedents were more often stereotypically female than stereotypically male (56 per cent vs 44 per cent) a difference significant at the 0.001 level $\chi^2_{(1)} = 14.42$. Likewise, using the Broverman *et al.* inventory, attributes assigned to *he* antecedents were more often stereotypically male than stereotypically female (83 per cent vs 17 per cent), while attributes assigned to *she* antecedents were more often stereotypically female than stereotypically male (67 per cent vs 33 per cent), a difference significant at the 0.001 level, $\chi^2_{(1)} = 23.25$.

Centrality. This section investigated the relation between pronoun choice and prominence or centrality of characters. We began with an intuitive definition of centrality and subsequently developed an operational definition based on the nature and frequency of mention of a protagonist. The results were the same for both analyses (only 2 per cent difference on the average). *It* was used more often for peripheral (42 per cent) than central characters (11 per cent) while *he* and *she* were used more often for central (89 per cent) than peripheral characters (58 per cent), a difference significant at the 0.001 level ($\chi^2_{(1)} = 55.36$). And centrality interacted with the number of pronouns used per antecedent, about 5 pronouns per antecedent for central characters but only 1.2 pronouns per antecedent for peripheral characters. However, we found no difference in the centrality of *he* vs *she* antecedents (84 per cent vs 79 per cent), which suggests that the female stereotype is as visible or prominent as the male stereotype in children's literature.

Pronoun switches. Pronouns were not always used consistently: sometimes both a human pronoun and *it* were used for one and the same referent. These pronoun switches ($N = 19$) were not included in previous analyses but are especially significant for theories of the mechanism underlying pronoun choice. Examples are shown in Table 5 broken down into seven surface categories: (1) protagonist vs narrator (where an animal is referred to as *he* or *she* by a protagonist in the story, but as *it* by the narrator), (2) personal vs impersonal points of view (where an animal or entity refers to itself as *he* or *she*, but another protagonist refers to it as *it*), (3) owner vs non-owner (where an owner refers to an animal as *he* or *she* while a non-owner refers to the very same animal as *it*), (4) emotional involvement vs non-involvement (where an object is referred to as *she* by someone emotionally attached to it, but as *it* by someone else), (5) positive vs negative evaluation (where an object is referred to as *he* when the protagonist wants to buy it but is downgraded to *it* when it is deemed not for sale), (6) active agent vs passive object (where an entity is referred to as *he* when part of the action but as *it* when passively acted upon), and (7) specific vs generic reference (where a specific, but presumably sex unknown animal is referred to as *he*, but the generic class is referred to as *it*).

One factor that seems to characterize all 19 pronoun switches is personal involvement. That is, the use of *he* and *she* seems to signal personal involvement or empathy for the referent in the case of a protagonist reflecting on its own personal situation, an owner of an animal, someone who is emotionally attached or values the referent, a protagonist taking an active part in a situation, or someone attached to a specific animal. By the way of contrast, the use of *it* seems to signal lack of involvement or empathy with the referent in the case of a narrator or protagonist objectively reflecting on an animal's situation, a protagonist who is not personally attached to the referent or wishes to devalue it, an entity

Table 5. The pronoun switches

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- (1) Protagonist vs narrator (5 instances)
 The fly was beating *its* wings furiously, trying to break loose and free *itself*.
 'First,' said Charlotte, 'I dive at *him*' . . . 'Next, I wrap *him* up.'
- (2) Personal vs impersonal point of view (6 instances)
 Early in the morning a peasant came along and saw *him*; he went out on to the ice and hammered a hole in it with his heavy wooden shoe, and carried the duckling home to his wife. There *it* soon revived. The children wanted to play with *it*, but the duckling thought they were going to ill-use *him*, and rushed in *his* fright into the milk pan, and the milk spurted out all over the room. The woman shrieked and threw up her hands, then *it* flew into the butter cask, and down into the meal tub and out again. Just imagine what *it* looked like by this time! The woman screamed and tried to hit *it* with the tongs, and the children tumbled over one another in trying to catch *it*, and they screamed with laughter . . .
- (3) Owner vs non-owner (3 instances)
 There was an old person of Ware
 Who rode on the back of a bear:
 When they asked, 'Does *it* trot?' he said,
 'Certainly not!
He's a Moppsikon Floppsikon bear!'
- (4) Emotional involvement vs non-involvement (1 instance)
 'Oh,' Jamie nodded. 'The statue in the museum is an angel. *It's* dressed in *its* altogether. I don't know yet if an angel was lost . . .'
 They finished their preparations for the night, took a small snack and decided it was safe to wander back into the Great Hall to look at their Angel.
 'I wish I could hug *her*,' Claudia whispered.
- (5) Positive vs negative evaluation (2 instances)
 ' . . . Say—what's that?'
 'Nothing but a tick.'
 'Where'd you get *him*?'
 'Out in the woods.'
 'What'll you take for *him*?'
 'I don't know. I don't want to sell *him*.'
 'All right. *It's* a mighty small tick, anyway.'
- (6) Active agent vs passive object (1 instance)
 Crash! The pod was torn open, and all the five peas rolled out into the bright sunshine; they lay in a child's hand, a little boy held them, and he declared they were just the right peas for his gun, so one was forthwith put into the gun and shot off. . . . 'Come what may,' repeated the fifth, as *he* was shot into the air; and *he* flew up to an old balcony under an attic window, flew into a crack in the wood, filled up with moss and mould. And the moss clustered over *it*; there *it* lay hid, lost to sight but not forgotten by our Lord.
- (7) Specific vs generic reference (1 instance)
 I was amazed and enchanted at the sight, and my delight was intensified when the leading bird stood still, and raising *his* head and long neck aloft, opened and shook *his* wings. For the wings when open were of a glorious crimson color, and the bird was to me the most angel-like creature on earth.
 It was not for several years that I had an opportunity of seeing the bird again; later I have seen *it* scores and hundreds of times, at rest or flying, at all times of the day and in all states of the atmosphere, in all *its* most beautiful aspects, as when at sunset or in the early morning *it* stands motionless in the still water with *its* clear image reflected below . . .
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which is acted upon, and finally a nonspecific animal or class of animals with which personal involvement is out of the question.

Further support for this 'personal involvement' hypothesis was found in an analysis of classes (rather than referents) which were referred to as *he* or *she* on one occasion but as *it* on another. For example, a ship was invariably referred to as *she* when a protagonist such

as the captain was personally involved with the ship or when the narrator loved or hated the ship, but other ships with no apparent emotional ties to the narrator or protagonist were referred to as *it*.

STUDY II: AN EXPERIMENTAL STUDY OF PRONOUN SWITCHES

Pronoun switches similar to those discussed above have been noted by others and like personification itself have usually been treated as minor exceptions to the surface agreement rule: that pronouns and their antecedents agree in grammatical number, gender and person. Reference to human infants, fetuses, and corpses using *it* rather than *he*, *she*, or *he or she* is another exception. So is reference to immature animals e.g. *calf*, *kid* using *it*, and mature animals using *he* or *she*. Study I adds to this list of exceptions the phenomena of personification, centrality, specificity and nature of the antecedent and its attributes (discussed above).

Study II tests the surface agreement rule experimentally and argues that the 'exceptions' are manifestations of a more general rule, namely that underlying attitudes toward the antecedent are responsible for all aspects of pronoun use. Under this alternate view of pronoun selection, the use of *it* for immature animals, infants, fetuses, and corpses reflects an underlying and perhaps unconscious attitude that such referents lack a prerequisite to personhood such as, say, the capacity to behave rationally. The link between personification and use of human pronouns likewise reflects an underlying supposition that personified antecedents possess the prerequisites of personhood. And an attitude of personal involvement determines use of human pronouns for specific, central, and familiar or frequently mentioned antecedents, according to the underlying attitude hypothesis. Attitudes underlying the choice of *he* vs *she* vary with the nature of the antecedent (*cat* vs *dog*) and the traits assigned to it, and are reflected in semantic differential ratings and sex-role inventories, according to the underlying attitude hypothesis.

Pronoun switches are also readily explained under the underlying attitude hypothesis. Attitudes underlying such switches are sometimes obvious to all as when a speaker says 'Oh no! Here *it* comes' when referring to an adult human for whom speaker and listener share some antipathy. But often the attitudes are more subtle in nature, as when an experienced carpenter comments to an inexperienced helper 'I take her (a ladder) out, you take it back in' (from Mathiot, 1979). According to Mathiot the initial reference to the ladder as *she* reflected the carpenter's attitude of familiarity with the ladder and pride in his ability to use and take care of tools, while the switch to *it* reflected contempt for the inexperienced helper's inability to use and take care of tools such as the ladder. In another, equally subtle example, a man refers to a door as *she* when talking to his family, but as *it* when talking to his boss and Mathiot's interpretation was that *he* or *she* is used in informal situations whereas *it* is used in formal situations such as talking to a boss.

Such examples are valuable. As phenomena from natural speech, they supplement the pronoun switches in children's literature and cannot be set aside as literary conventions. Like any small corpus of naturalistic data, however, they allow multiple interpretations and their generality is open to question. For example, the data of Study I suggest a simpler interpretation for both of the examples discussed above: that *he* or *she* signals personal involvement, whereas *it* signals non-involvement on the part of either the speaker or listener as in the case of the boss who is unfamiliar with the family door.

What is needed to resolve such issues as well as to systematically test the 'underlying attitude hypothesis' is a means of studying pronoun switches in the laboratory. Study II was undertaken as a first step in that direction. Subjects received sentence fragments such as 'When the hippopotamus noticed her enemy across the river' and had to complete them as quickly as possible. The main independent variable was the pronoun in the fragment and the issue was how often and under what circumstances subjects would switch pronouns in their completions from *he* or *she* to *it*. Under the underlying attitude hypothesis, we predicted fewer such switches for female than male subjects because of a difference in attitudes demonstrated in Borden (1974). Borden had 50 male and 50 female subjects rate the 1000 most frequently occurring words in English on a 5 point femininity-masculinity scale, ranging from definitely feminine, through neutral to definitely masculine and found that males rated more words as neutral than did females (707 vs 578). This difference in attitudes predicts more switches from *he* or *she* to *it* for male than female subjects, according to the underlying attitude hypothesis.

Method

Materials. The materials consisted of 56 sentence fragments (11 syllables long on the average) typed on 5 × 8 in index cards. Thirty-six were *experimental* fragments and 20 were *fillers*, to prevent the subjects from suspecting the true purpose of the experiment. The grammatical subjects of experimental fragments were animals engaged in activities characteristic of their species. Half the animals were *he* antecedents in Study I (e.g. *dog*, *horse*) and half were *she* antecedents (e.g. *hummingbird*, *cat*). Two were (typically) household pets (*dog*, *cat*) and the remainder were (typically) non-pets (*ant*, *monkey*, *pig*, *horse*, *deer*, *hippopotamus*, *mouse*, *chickadee*, *hummingbird*, *rabbit*).

The experimental fragments came in three versions: one version included *he* e.g. 'When a dog finds his long lost bone,' another included *she* e.g. 'When a dog finds her long lost bone,' and the third contained no pronoun e.g. 'When a dog finds a long lost bone.' Each subject received only one version of each experimental fragment, with the *he*, *she*, and no-pronoun versions counterbalanced across subjects and fragments.

Subjects. The subjects were 36 university students (18 males, 18 females; mean age 22) who received credit in an introductory psychology course for their participation. All were native speakers of English.

Procedure. A female experimenter instructed each subject individually as follows.

'This is an experiment on the completion of sentences. You will be asked to read a sentence fragment out loud, and to think up a completion for it as quickly as possible. Your completion must be as concise as possible, form a grammatical sentence and above all must be relevant to the meaning of the fragment. If your completion does not seem to bear any connection to the words on the card, you will be asked what the connection is. Once you have your completion in mind, say the entire sentence out loud, reading what is on the card and then giving the completion. Remember to proceed as quickly as you can since you will be timed, but try not to make errors. Are there any questions?'

The experimenter thoroughly shuffled the cards for each subject and then presented each card face down, flipping it over while starting a timer, which she stopped as soon as the subject completed the sentence. A tape recorder recorded the responses, but the experimenter recorded the trial number, completion time, and verbatim completion after each sentence.

Results

As can be seen in Table 6, the pronoun used to complete a fragment interacted with subject sex and nature of the fragment. For the no-pronoun fragments, *she* was used equally rarely by males (10 per cent) and females (7 per cent), but females used *he* more often than males (79 per cent vs 57 per cent) and males used *it* more often than females (24 per cent vs 13 per cent), a difference significant at the 0.05 level ($\chi^2_{(1)} = 4.58$).

For the pronoun fragments, males switched pronouns more often than did females (30 per cent vs 14 per cent), a difference significant at the 0.001 level using a goodness of fit test ($\chi^2_{(1)} = 13.76$). Moreover, males used *it* more often in completing *she* than *he* fragments (17 per cent vs 11 per cent) whereas females used *it* more often in completing *he* than *she* fragments (3 per cent vs 0 per cent), a difference significant at the 0.05 level ($\chi^2_{(1)} = 4.87$).

Table 6. Pronouns used for completing the fragments (in %) and response times (in sec) as a function of sex subject sex and type of fragment

Type of fragment	Pronoun used in completion				Response time
	<i>he</i>	<i>she</i>	<i>it</i>	No pronoun	
<i>He</i> fragments					
Males	78	0	11	11	6.32
Females	83	6	3	8	5.70
<i>She</i> fragments					
Males	2	71	17	11	6.92
Females	5	92	0	3	5.82
No pronoun fragments					
Males	47	10	24	20	6.26
Females	72	7	13	8	6.10

Switches from *he* and *she* to *it* varied with the nature of the antecedent: 0 per cent switches for pets as compared with 9 per cent switches for non-pets (see Table 7), a difference reliable at the 0.001 level ($\chi^2_{(1)} = 19.04$). Pronouns used for completing no-pronoun fragments also differed for pets vs non-pets: *he* and *she* were used more often for pets than non-pets (88 per cent vs 64 per cent) while *it* was used more often for non-pets than pets (21 per cent vs 4 per cent), a difference reliable at the 0.05 level ($\chi^2_{(1)} = 4.35$).

The nature of the antecedent also influenced pronoun choice. Use of *he* was more common than *she* (92 per cent vs 8 per cent) for no-pronoun fragments containing *dog*, a stereotypically male animal, but not for *cat*, a stereotypically female animal (42 per cent *he* vs 42 per cent *she*). This difference was reliable at the 0.01 level, ($\chi^2_{(1)} = 7.22$), with similar results for male and female subjects. In a second analysis, 'masculinity scores' were determined for the animals, based on their summed activity and potency ratings in Heise (1971). The use of *he* for the no-pronoun fragments correlated significantly with these masculinity scores ($r_s = 0.73$, $p < 0.05$). Finally, completions of questionable meaningfulness sometimes occurred when pronoun and type of antecedent were in conflict e.g. 'When a hummingbird flies to his nest (fragment), he will lay his eggs.' (completion).

DISCUSSION

The present results strongly supported the underlying attitude hypothesis. Attitudes of personal involvement or familiarity must have played a role in pronoun choice for pets vs non-pets since subjects were more likely to use *he* or *she* for pets such as *dog* or *cat* than for

Table 7. Pronouns used (in %) for pronoun vs no-pronoun fragments and pet vs non-pet antecedents

Type of fragment	Nature of antecedent	Pronoun used in completion			
		<i>he</i>	<i>she</i>	<i>it</i>	No-pronoun
Pronoun	Pets	42	52	0	6
	Non-pets	44	38	9	9
No pronoun	Pets	67	21	4	8
	Non-pets	58	6	21	15

non-pets such as *hippopotamus* or *chickadee*, species they were less likely to have contact, let alone personal involvement with. Attitudes toward the antecedents also played a role in the choice of *he* vs *she* since subjects were more likely to use *he* for completing sentences about a stereotypically-male animal such as *dog* than for a stereotypically female animal such as *cat*. And as expected under the underlying attitude hypothesis, subjects often switched pronouns from *he* or *she* to *it* when referring to unpersonified animal antecedents. The existence and nature of these switches as well as the difference between male and female subjects are difficult to explain under the surface agreement hypothesis, but are actually predicted under the underlying attitude hypothesis.

Moreover, the pronoun switches exactly mirrored the attitudes measured in Borden (1974). As in the case of pronoun switches, the difference in attitudes of male vs female subjects in Borden's data was largely attributable to males rating fewer words as feminine than did females (77 vs 171), a difference significant at the 0.001 level ($\chi^2_{(1)} = 35.62$). This finding further reinforces the underlying attitude hypothesis and suggests that males tend to assign referents a peripheral or personally uninvolved 'object' status, especially in the case of female referents. Females on the other hand less often assign referents a peripheral or personally uninvolved 'object' status, whether the referent is male or female.

Consider now the relation between personification and sexism in other areas of English, e.g. the prescriptive use of *he* to mean 'he or she.' Experimental studies (e.g. MacKay and Fulkerson, 1979) have shown that prescriptive *he* assigns women an almost non-existent status in the comprehension of supposedly generic sentences, mirroring the peripheral status and infrequent mention of *she* animals in Study I. The underlying attitude hypothesis readily explains such correspondences since the same underlying attitudes may contribute to sexist uses elsewhere in the language (discussed extensively in Miller and Swift, 1976; Lakoff, 1975; and Thorne and Henley, 1975).

However, attitudes are complex and different attitudes may dominate different aspects of language use. For example, underlying attitudes seem to differ for personification and animalification (references to humans using animal terms). Whereas male and female personifications are evaluatively equivalent, animal terms applied to females e.g. *old hen*, *cow*, *bitch*, are usually more derogatory than otherwise equivalent male terms e.g. *old rooster*, *bull*, *dog*.

The issue is how the language got to be this way and a study by Schultz (1975) on the evolution of sex-linked semantic derogation in English provides a clue as to the mechanism. Schultz (1975) found that terms designating women, e.g. *spinster* tend to acquire pejorative connotations over time (unlike otherwise equivalent terms designating males, e.g. *bachelor*) and attributed these evolutionary changes to male fears and prejudices concerning women.

However, such fears and prejudices seem less likely to play a role in literature written for children rather than adults and the evaluative equivalence of male and female terms in children's literature seems to support that conclusion.

It should be noted in passing that women are not immune to sex-stereotyping in their pronoun choices. Even though the female subjects rarely switched *she* or *he* to *it*, they nevertheless tended to use *he* rather than *it* for stereotypically-male animals such as cat.

Similarities of the present results to those Nilsen (1977) should also be noted. Nilsen (1977) had children (ages 4–11) describe pictures of animals of indeterminate sex engaged in species-characteristic activities. The children used pronouns over 3000 times in describing the animals: 51 per cent *he*, 48 per cent *it*, and only 1 per cent *she*. The appropriate comparison with Study II involves the use of *he*, *she* and *it* for the no pronoun fragments, since Nilsen only analyzed instances of *he*, *she*, and *it*. Given this restriction, the pattern of results was similar: *he* was used most frequently (69 per cent), *it* less frequently (21 per cent), and *she* least frequently (10 per cent).

Two differences stand out, however: unlike the present study, Nilsen (1977) found no effect of subject sex and relatively greater use of *it*. These differences in results reflect differences in either materials, experimental procedures, or subjects (children vs adults). This latter possibility subsumes the hypothesis that language use becomes more sexist as a function of age and the fact that adults in the present study used *she* more often than the children in Nilsen (1977) does not contradict this hypothesis, since the use of *she* also followed stereotypical patterns depending on the nature of the antecedent.

Consider now the prototypical pronoun hypothesis outlined in the introduction. McConnell-Ginet (1979) argued that use of 'generic' *he* and 'generic' *she* is intended to covertly personify generic nouns, enabling listeners to form a concrete and memorable image of say, a representative doctor or nurse. The basic assumption was that mental images are replicas of sensory experience. The concept of a person cannot be imaged according to McConnell-Ginet since 'there are no common gender persons, no androgyns.'

The basic assumption is wrong, however. Mental images are often symbolic in nature, bearing no direct or sensory relation to the concept they represent, as when the concept of justice is imaged as a scale. Moreover, mental images are usually abstract in nature and seldom, if ever, represent replicas of sensory experiences in all their vivid detail. For example, if called upon to image a monkey, people seldom image its sex, and we can likewise image a sex-unspecified person, although our language makes it difficult to practice imaging and thinking about humans in this way. Consider the generic concept *writer* for example. In reality, as many people who claim to be a 'writer' are female as male (see MacKay and Fulkerson, 1979) but students asked to image *a writer* usually image a male. One reason may lie in the repeated association of the word *writer* with a male image triggered by the prescriptive use of *he*. That is, prescriptive *he* usually accompanies use of the word *writer* and as discussed above, the pronoun used conveys the underlying attitudes and concepts of the producer, which in turn determine what image the perceiver constructs. If our use of pronouns conveyed the attitude that a writer may be either male or female, then given enough experience with such uses, we would be able to image a sex-unspecified writer as readily as a sex-unspecified monkey. Under this hypothesis, sex-unspecified images of persons need not wait for the evolution of physical androgyns, but only for the appearance of non-sexist language and attitudes.

The intimate connection between language and attitudes makes it difficult to estimate the effects of attitudinal bias in children's literature. As long as children's literature conveys

sexist attitudes, children will learn those attitudes and use the same linguistic devices to pass them on to others. In support of this hypothesis are numerous studies demonstrating the early awareness of sex stereotypes in children (Kuhn *et al.*, 1978; Williams *et al.* 1975) and the role of children's literature in transmitting this awareness (Nilsen, 1977; Flerx *et al.*, 1976).

Moreover, sex-stereotyping in children's literature almost certainly influences children's self-concepts. Women who adopt the stereotype and score high on stereotypically-feminine traits have lower self-esteem than androgynous women who score high on both feminine and masculine traits (Schiff and Koopman, 1978), perhaps because feminine traits are less highly valued than masculine ones (Broverman *et al.*, 1972).

What then are the solutions to the problem of stereotyping in children's literature? One frequently suggested solution is to use *it*. However, the present data indicate that *it* carries connotations of distance and non-involvement which makes it an especially poor solution for children's literature. Other available lexical solutions such as *he or she*, singular *they* and pluralization run into equally prohibitive problems (see MacKay, 1980). Nilsen (1977) offered a somewhat different suggestion in a study of children's literature: to teach children that words are ambiguous and change their meaning over time. The hope was that children would then interpret sexist uses generically. This proposal is reminiscent of the strategy of prescriptive grammars over the last 250 years: to teach children that *he* means 'he or she' in certain (generic) contexts. This strategy has failed in the case of the prescriptive *he* (see MacKay and Fulkerson, 1979) and seems even more likely to fail in the case of personification.

For the immediate future the best prescription seems to be role reversal: to personify stereotypically-female animals e.g. *cats* as male, and stereotypically-male animals e.g. *dogs* as female; and to assign stereotypically-male traits such as *courage*, *strength*, and *wisdom* to female protagonists, while assigning stereotypically-female traits such as *prettiness*, *niceness*, and *sweetness* to male protagonists. We are of course not advocating changing existing literature. What is needed is a new literature to balance the old. Since language reinforces and maintains stereotyped notions of masculinity and femininity, writers and especially writers of children's literature have a responsibility to break free of the sexist stereotypes and literary conventions of the past.

For the long range future, balanced portrayals will be needed, involving some mixture of traditionally stereotypic traits for both male and female protagonists. What also will be needed is a new pronoun for signalling humanness without signalling sex. Such a pronoun would be useful for solving the pronoun problem in not just children's literature but the language at large. However, children's poetry is likely to prove the best starting point for such a pronoun, since poetry is traditionally more liberal with regard to novel use, coinage, and derivation or alteration of words and since children are more likely than adults to accept such a neologism.

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