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The Cognitive Linguistics of Scalar Humor

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1 Introduction to Scalar Humor

Humor holds a place among the most intriguing and least understood of our cognitive capacities. It has been the topic of occasional linguistic investigation (e.g. Attardo 1994, Coulson 2000), but since humor falls outside the traditional scope of core language, grammars rarely refer to humorous uses of language. And yet humor, like communicating and instructing, is one of a small number of pervasive and universal language functions.

Among the various approaches to language, those falling under the rubric of cognitive linguistics may be best equipped to bring humor under rigorous scrutiny. The reasons for this are many, and include the focus in cognitive approaches on the form *and* functions of linguistic items, on the pragmatics and semantics of linguistic constructions, including idioms, and on domain-general cognitive mechanisms underlying language use.

There are various types of humor conveyed through a linguistic modality, including puns, formulaic jokes, insult humor, and non-sequitur humor. In this paper, however, we will focus on just one sort of linguistic humor. We dub this type of humor *scalar humor*, because at its core is the manipulation of a conceptual scale. Some examples of this type of humor follow in (1).

(1)   (a)   I was such an ugly kid that when I worked in a pet store, people kept asking how big I'd get.

        (b)   I was such an ugly kid that when I was born the doctor slapped my *face*.

In scalar humor, an entity (like some person, object, or situation) is described in the first clause as having a great deal of some property. This is then followed by a second clause that provides a punchline, whose characteristics and relation to the first clause will be described in detail below.

Humor of this sort is extremely prevalent. It is, for example, a staple of stand-up comedy (as in (2)), to the point where a setup like the first line in (2a) will elicit a response like the second line from any responsive audience.

(2)　(a)　I just got back from New York and boy was it cold!

How cold was it?

It was so cold that flashers in Central Park were just describing themselves.

(b)　I was so poor growing up ... if I wasn't a boy, I'd have nothing to play with.

But this type of humor has been most studied in its use as the main form of ritual humor-insult in 'the Dozens'. This social practice, known alternatively as 'Snaps', as documented by Labov (1973) and others, is constructed almost entirely around scalar humor. The Dozens is a type of routinized social interaction, mostly restricted to young adult males in inner city environments, where it is purportedly extremely commonplace. In the Dozens, two participants engage in verbal sparring, using scalar humor in a maximally creative, insulting, and specific way. Examples like the ones shown in (3) below can be found on any of more than 100 web sites dedicated to the various sorts of scalar humor used in the Dozens, most prevalently, to jokes about *yo' mama* (4):

(3)　(a)　Your breath smells so bad, people on the phone hang up.

(b)　Your brother is so ugly, when he sits in the sand the cat tries to bury him.

(4)　(a)　Yo' mama is so old, her Social Security number is in Roman numerals.

(b)　Yo' mama is so fat, when she dances the band skips.

Here then is a domain ripe for linguistic analysis. A set of relatively specific but not particularly unique linguistic forms are used pervasively to serve a social function, in a variety of settings. There are two fundamental questions that we will tackle below.

1. What cognitive mechanisms allow language users to produce creative language behavior like this?

2. Why are these utterances funny - what characteristics of this behavior evoke laughter or other humor responses in interlocutors?

To give away our punchline right off the bat, we will be arguing that there is nothing structurally special about these utterances. They use an existing phrasal construction that has an inference built into it. They abuse that inference through the use of imagery, metaphor and other general-purpose cognitive mechanisms. The resulting mismatch between the hearer's expectations about the utterance and its actual realization, as well as the imagery evoked are the very things that make the utterances funny.

2   The *X IS SO Y THAT Z*   Construction

Formally, scalar humor like the examples given above makes use of one of a set of related phrasal constructions with some variant of the form:

X IS SO Y THAT Z

In this construction, X is a noun phrase that identifies the object of the humor, such as *yo' mama*. This is followed by Y, a scalar predicate, which can for example be adjectival (like *fat*) or verbal (like *smells bad*), and finally by Z, a proposition. As a whole, this construction entails that X's being Y causes Z.

The first thing most grammarians will notice is that the very same construction is used for non-humorous purposes, as in the examples in (5) below.

 (5)   (a)   It was so cold where I live, we found dogs huddling for warmth.

     (b)   The film's ending was so shocking that it physically hurt you.

Looking just at these non-humorous utterances, the first clause predicates Y of X and the second, Z, provides evidence or a depiction of X being very Y. This construction can thus be said to encode a pragmatic relationship between the first and the second clause – the second is implied to depict X as very Y. But how can we establish that this pragmatic relationship is encoded in the X IS SO Y THAT Z construction, rather than simply being a matter of pragmatic interpretation, associated with the word *so* or the juxtaposition of two clauses?

One reason we might believe that the inferential relationship between the two clauses is purely interpretive, and not at all encoded in the construction is that this same pragmatic relationship can be seen not only in a closely related construction, X is such a Y that Z, seen in (6a), but also when similar content is expressed in two separate sentences, X is Y. Z., as seen in (6b). In this last case, the implication cannot be said to be encoded constructionally, but rather must be simply one of a number of possible pragmatic relations between a sentence of the form X is Y and a sentence that follows it, such as contrast (6c) or explanation (6d).

(6)   (a)   John is such a charmer that he convinced everyone that he's related to Brad Pitt.

       (b)   John is charming. He managed to convince everyone that he's related to Brad Pitt.

       (c)   John is charming. Paul isn't.

       (d)   John is charming. He gets it from his dad, the car salesman.

However, we can see that the pragmatic relation is actually encoded in the X IS SO Y THAT Z construction because non-humorous uses of this construction can only have Zs that depict X being very Y (as in (5)). Any other relation is a non-sequitur (7), unless it can be interpreted as evidence that John is very charming. For example, if Paul is known to be extremely charming, then sentence (7a) could be read as meaning that John is so charming that even Paul, who normally seems extremely charming, appears to be not charming by comparison. This implies that the pragmatic relationship is encoded in the X IS SO Y THAT Z construction.

(7)   (a)   ?John is so charming that Paul isn't.

       (b)   ?John is so charming that he gets it from his dad, the car salesman.

Given just this evidence however, an alternative account is equally plausible. It could be that the required relationship between the two clauses is entailed by some aspect of the semantics of *so* (or in other cases *such*). While the relationship between the clauses is at least in part related to the semantics of *so* or *such*, it is in fact the semantics of these terms only in the context of this particular construction that could explain the behavior at hand. When we look closely at *so*, for example, it has a number of related meanings. In constructions other than X IS SO Y THAT Z, as in (8a) or (8b) below for example, it can be used as a simple intensifier, or, as in (8c), to introduce a deictic gesture. It is only in the X IS SO Y THAT Z construction

that *so* seems to act in such as way that it would introduce a requirement that the first clause describes a scenario that causes the second to by true as well. In other words, it is the entire construction, including the word *so* or *such*, that bears the burden of the pragmatic relation between the two clauses.

 (8)   (a)   Look at little Billy - he has gotten SO big!

        (b)   I am so happy that you decided to bring your monkey to class.

        (c)   The guy who stole my purse was about so tall.

A final piece of evidence that there is in fact a sentence-level construction at work here is that this particular sentence form is stereotypically and conventionally employed for a particular discourse purpose, namely a class of humorous utterance.

In sum, then, this construction has lexical (*so*) and grammatical requirements on its linguistic constituents, and entails a pragmatic relation between its two clauses, whether it is used for humorous or non-humorous purposes.

3   Scales

A major portion of the pragmatics of the X IS SO Y THAT Z construction seems to depend on knowledge of scales. In the first clause, a scale of Y-ness is identified and the entity X is placed high on that scale. The second clause in non-humorous uses of the construction describes a scenario in which X participates, and which results from X indeed being very high on the Y scale. A full understanding of the pragmatics of this construction, then, will rely on a theory of how scales work.

In the pragmatics literature, there been quite a lot of work on *linguistic scales*. A linguistic scale is a set of words, of the same grammatical category, which can be ordered by their semantic strength or degree of informativeness (Horn 1972, Levinson 1983, 2000). Examples of such ordered words are:

> {cool, cold, freezing}
> {may, should, must}
> {sometimes, often, always}

These linguistic scales have been used as explanations for *scalar implicature*, a type of *quantity implicature*

The water was cool implies *The water was not cold or freezing*.

I often go to the beach implies *I do not always go to the beach*.

The scales used by the X IS SO Y THAT Z construction, however, are quite different from these linguistic scales. First and foremost, they are not restricted to particular grammatical categories. As seen in example (9) below, there need not be a word in the Z clause that falls on the same linguistic scale as the word identifying the scale Y (in this case, the adjective *cold*).

(9)   It was so cold in the kitchen that there was frost on the lettuce.

Additionally, the use of scales is not limited to a context-independent ranking, but more interestingly seems to depend on shared assumptions about the default values of the entity measured for that given property. In comparing example (9) above with (10) below, for example, we see that the default temperature of a location X is crucial for the felicity of this example of the X IS SO Y THAT Z construction. Only in those cases where Z accurately provides a scenario that depicts X as more Y than it is expected by default to be can the construction be appropriately applied. Example (10) seems to be infelicitous because most places above the Arctic circle have an average yearly temperature lower than freezing, which means that finding frost on lettuce is hardly an indication that the weather was any colder than normal.

(10)   ?It was so cold in the arctic circle that we found frost on the lettuce.

An interpretation of this context-dependence (Michael Israel, p.c.) is that the X IS SO Y THAT Z construction actually involves two scales, not just one. The first, as discussed above, ranks Xs on the scale of Y. The second ranks Zs in terms of their exceptionality as applied to X. In order for the X IS SO Y THAT Z construction to be used felicitously, Z has to count as a remarkable scene. When it doesn't, as in (10), that is, when Z describes an unexceptional scene, then the sentence is infelicitous.

In sum them, while scalar inference is an important component of the X IS SO Y THAT Z construction, it is not linguistic scales so much as a domain-general ability to assign scales in context to particular entities that is relevant. In this sense, the scalar reasoning required to produce and understand X IS SO Y THAT Z sentences is akin to that identified by Fauconnier (1975), Kay (1990), and Israel (1996) for the use of polarity items.

4 Characteristics of scalar humor

We have established that non-humorous uses of the X IS SO Y THAT Z construction encode an implied pragmatic relationship between the first and second clause, which is based on scalar reasoning. In this section, we will show that X IS SO Y THAT Z humorous items make use of the very same construction, but that they crucially differ in that the actual relationship between the first and second clause fails to fulfill this implied relationship in one of a number of ways.

A few examples will demonstrate the point. In some humorous uses of X IS SO Y THAT Z, Z may not literally depict X as very Y, but (as in 11a) may be indirectly related to X and Y through metaphor or some other cognitive mechanism. Alternatively, Z may depict X as more Y than it possibly could be, as in (11b). Finally, as in (11c) Z may describe a scenario that is not literally possible. In all of these humorous cases, the utterance may not be informing the interlocutor that X is very Y, as it does in the non-humorous cases, but rather may simply result in a (sometimes shared) humor experience. As we can see, then in all these cases, some aspect of the implied relationship between the first and second clause is absent, and the result is humor. In this section, we will focus on the ways that the first and second clause are related in the humorous utterances, and how the implied relationship between them is contorted through hyperbole, understatement, and indirect relation.

(11) (a) The reception to my talk was so cold that I saw students huddling together for warmth.

(b) Yo' mama's so old, she was a waitress at the Last Supper.

(c) Yo' mama's so fat, she broke her arm and gravy poured out.

In the case of *hyperbole*, the scene described by Z falls well beyond the normal scale of Y for X. In the examples in (12) below, the use of the X IS SO Y THAT Z construction implies that Z will describe a scene falling within the normal range of Y vales for X, and yet it falls well beyond this range.

(12) (a) Yo' mama's so fat, when she was diagnosed with a flesh eating disease, the doctor gave her 5 years to live.

(b) Yo' mama's so fat, she gets runs in her jeans.

There are several ways to overstate the Y-ness of X. In some cases, the scene described by Z would fall well beyond the possible scale of Y for X

even if some false supposition were true. We call this type, exemplified in (13) below, *fantastic hyperbole*. For example, (13a) makes use of the false supposition that images have weight proportional to their subjects, and (13b) supposes that peanut-throwing is a result only of the relative size of the thrower and recipient.

(13) (a) Yo mama's so fat, a picture of her fell off the wall!

      (b) Yo mama's so fat, at the zoo, the elephants started throwing her peanuts.

In other cases of hyperbole, the scene described by Z would fall within the normal scale of Y for some other X that tends to be much more Y. We call this form of overstatement *transferring hyperbole* (14). For example, in (14) the scale of a person's size is inappropriately compared with the size scale of a congressional district (14a), or a major astronomical body (14b).

(14) (a) Yo mama's so fat, her ass has its own congressman.

      (b) Yo mama's so fat, she has smaller fat women orbiting around her.

In *punning hyperbole*, the scene described by Z falls well beyond the normal scale of Y for X and also incorporates a play on words, which may be based on homonymy, polysemy, or some idiom, as in (15).

(15) (a) Yo mama's so fat, she went on a light diet... As soon as it's light she starts eating.

      (b) Yo mama's so fat, she ain't on a diet, she's on a triet... She be like "What ya'll eating? I'll try it!"

      (c) Yo mama's so fat, on Halloween she says "Trick or meatloaf!"

In opposition to hyperbole is *understatement*, a much less common form of scalar humor, in which the scene described by Z falls far from the extreme end implied by the construction. Rather, Z describes a scene that demonstrates very little Y of X, as seen in (16).

(16) It was so cold last week in Hawaii that I had to put on socks.

The final set of ways that the first and second clauses may be related can be grouped together as *indirect relations*. In these cases, the scalar assumption is not manipulated through misapplication of a scale or application of the wrong scale, but rather Z is only indirectly related to Y, and therefore the pragmatic implication that the second clause will demonstrate that X is very

Y is not upheld. The indirect relation can be mediated by one or some set of: polysemy, idiomaticity, conceptual metaphor, or imagery.

In the case of *polysemy*, some word or words of Z may have multiple related meanings, one of which can be applied to the first clause and the other of which is part of the scene described in Z, as in (17). Here, it is the expressions "chilling out" and "get he out" that have multiple interpretations.

(17) (a) It was so cold out that rap stars were actually chilling out.

(b) Yo' momma's so dumb, they had to burn down the school to get her out of second grade.

In other instances of indirect relations between the two clauses, some particular *idiom* may be suggested by Y, and in Z is interpreted non-idiomatically (literally) or according to the polysemy of some linguistic elements of the idiom. This can be seen in (18).

(18) (a) Yo momma's so fat, she can't even jump to a conclusion.

(b) It was so cold, I saw a lawyer with his hands in his own pockets.

(c) Yo mama's so fat, when she hauls ass, she has to make two trips.

In a third type of indirect relation, the two clauses are linked together through *conceptual metaphor*. In these cases, Z depicts a scene that is metaphorically very Y, as in (19). In cases like these, by contrast with the polysemy cases above, it is not simply polysemy of some element in Z that relates the two clauses, but rather a general relationship between the domain of Y and the domain depicted in Z (in the case of (19), these are physical coldness and emotional accessibility, respectively.

(19) It was so cold, I saw a bunch of Eskimos using Hillary Clinton for heat.

Finally, the relation between Y and Z may be purely based on shared *imagery*. In these cases, the image described in Z is compatible with Y, but in Z it is cast as playing part in a different type of scene, as in (20)

(20) It was cold last night! I was so cold I was rubbing my hands faster than Dick Cheney on an Enron payday.

To summarize so far, these humorous utterances are all based on a non-humorous construction, X IS SO Y THAT Z. In the humorous utterances, the scalar inference set up by the the construction is fails to be fulfilled in one

of a number of ways: (1) by describing X as falling well beyond the appropriate scale of Y; (2) by describing X as falling well below the high end of the scale of Y, or (3) through a Z that describes X as very Y, but only through some indirect conceptual relation, such as polysemy, idiom, conceptual metaphor, or imagery.

Crucially, the necessary mechanisms for these types of inference rejection must all exist independently in the individual's cognitive system. Independent of humor production or understanding, language users have knowledge of polysemy, and metaphor. Entirely independent of linguistic abilities, they can perform imagistic, hyperbolic, and specious reasoning. In other words, scalar humor can be constructed from used parts.

5   What makes it funny?

We have outlined the linguistic basis for scalar humor (the X IS SO Y THAT Z construction) and the ways scalar humor plays on the pragmatic inference encoded in this construction. But our second fundamental question still remains - what is it about these different ways of toying with the entailed inference that is funny? Why do hearers routinely exhibit humor responses, such as laughing, when exposed to scalar humor? To answer this, we must look to humor research for theories of what makes anything funny.

There is a consensus among many humor researchers that a large part of humor results from an evoked incongruity among the components of a humorous utterance (and its context), which is subsequently resolved. There are several particular versions of this. *Relief theories* (e.g. Kant 1790, Spencer 1860) view the resolution as involving some threatened harm that is then revealed to be inconsequential. *Conflict theories* hold that humor evokes two conflicting impulses - the impulse to proceed and the impulse to draw back . These may be more specifically the results of conflicts between feelings of friendliness and hostility or play and seriousness. *Incongruity theories* (e.g. Schopenhauer 1819) see incongruous and simultaneous perception of an object or situation as the crux: "two or more inconsistent, unsuitable, or incongruous parts or circumstances [are] united in one complex object." In such theories, two distinct ideas are related through common elements, or one thing is perceived in two different ways using different frames of reference. As in other models, incongruity theories see the resolution of the incongruity as crucial.

Scalar humor is a clear example of a created and subsequently resolved incongruity. The use of the X IS SO Y THAT Z construction leads the language understander to expect a second clause that depicts the X from the first clause as particularly Y. However, in all humorous uses of this construction, the second clause fails to provide such a depiction, in one of the ways

outlined in Section 4, above. There is thus an incongruity between the expected character of Z and its actual character. For example, in (19) above, the content of the second clause is incongruous with the expectation that it will depict a scenario in which it is actually very cold - it's not literally true that in particularly cold environments Eskimos would really use Hillary Clinton for heat. Similarly, in response to example (12b) above, a hearer knows that no-one actually gets runs in their jeans, no matter how fat they are.

These incongruities between an expected type of described scene and an apparently irrelevant or inappropriate one are subsequently resolved through the various mechanisms described above. The language understander is able to relate the image of Dick Cheney (in (20) above) rubbing his hands together (furiously, because of his elevated excitement level at the prospect of an Enron payday) to the image of a cold person rubbing his hands together to stay warm because of their common imagistic structure. The language understander thereby resolves the incongruity - Z is discovered not to be irrelevant or incongruous, but rather to simply appear that way until the proper relation is discovered.

In its resolution of an incongruity, the mechanism for appreciated scalar humor is quite like the one used for other sorts of humor such as the mock headline in (21) from the February 19, 2003 edition of The Onion. In this example, there is an incongruity between the thing the subject is writing on his checks and the type of thing that is likely to be still being written on checks (presumably a year). The incongruity can be resolved through general knowledge that the Chinese calendar identifies each year with an animal, meaning that "horse" can therefore be seen as a type of date.

(21)   Chinese man still writing 'horse' on checks.

The resolution of a perceived incongruity, while central, is not the only factor that contributes to making scalar humor funny. In most cases, the actual content of the commentary on the "butt" of the joke also has an important effect. It should not be surprising that those instances of scalar humor that people tend to find funniest (based solely on the volume of laughter in response to the examples sentence when this material is presented publicly) are those that make a targeted attack on a canonically undesirable property of an individual. In particular, scalar humor seems most successful (that is, funniest) when it targets people for being old, ugly, stupid, and particularly, fat. Indeed, X IS SO Y THAT Z humor that exploits desirable traits of the joke's target is vanishingly rare. In this sense, it is not unlike other forms of humor, which often depend upon personal attacks. Some theorists, among them Freud (1905) view unchecked aggression as the vital

component of what Freud calls *tendentious* humor - risqué or controversial humor that results in howling laughter.

Finally, humorous imagery is yet another important factor in the funniness of scalar humor. Imagery is exceedingly difficult to evaluate for its humorousness, but it is undeniable that some individual language users will simply find certain images comical. For both of the authors, the image of smaller fat women orbiting around "yo' mama" is simply irresistible, while the image of a lawyer with his hands in his own pockets is not particularly funny. Scalar humor that uses hyperbole of one form or another is particularly conducive to highly evocative and absurd imagery, which may contribute to the prevalence of this particular variety of the humor form.

We've argued that what makes scalar humor funny at its core is the manipulation of a constructional implication in such a way that the relation between the setup and a seemingly irrelevant punchline can in fact be explained and understood. Beyond the resolution of incongruity, scalar humor also benefits from a tendentious streak and the imageability of its content.

6 Conclusions

There are several reasons why we believe humorous language is particularly useful for linguists. For one thing, it enlightens our theories of constructional pragmatics and the ways that pragmatic inferences can be rejected. In particular, this particular study has shown scalar reasoning to play a central role in the functioning of a grammatical construction. We have also seen from this study that humorous uses of language cannot be explained without reference to domain-general cognitive mechanisms, like metaphor, polysemy, and imagery.

But humorous linguistic data can also provide a type of "external" evidence on structural properties of language. For example, punning behavior can provide evidence for lexical representations - we might investigate for example the structure of lexical representations through the possibility or impossibility of punning on particular words. As another example of using humorous language as evidence for structural linguistic properties, the existence of ambiguity, which humorous utterances often play on, can illuminate syntactic representations.

Perhaps of more importance, however, humorous language study allows us to consider these issues in the context of truly creative language use. Linguistic creativity has been central to linguistics since Chomsky (e.g. 1965), who identified creativity as a central component of linguistic competence (see also more recently Hauser et al. 2002). However, most linguistic studies, if at all interested in creativity, restrict this to *grammatical creativity*, which can be defined as the ability to put together existing structures in

new ways, such that the product is grammatical utterances (i.e. grammatical competence). Grammatical creativity yields grammatical utterances, as in (22) below

(22)   Magnanimous purple theories gallop tepidly.

Of course, grammatical creativity is only a part of the actual creative capacity humans demonstrate when using language. Contrasted with the ability to put together known pieces to form new wholes is the ability to select an existing structure to be meaningfully used in a new context (Di Pietro 1976). This can be identified as *selectional creativity.* For example, in order to select a pat phrase like *I am not a crook* to be uttered in a new context such as the one in (23), one must compare the semantics and pragmatics of the target phrase with the current discourse situation and judge it to be appropriate.

(23)   - Who left the refrigerator open?

       - I am not a crook.

But the ability to produce and interpret combinatorially novel utterances in novel situations, which is what language users who engage in the production and understanding of scalar humor are doing, involves both the grammatical and the selectional capacities. This combined, *full creativity* is the ability to produce and interpret an entirely novel utterance such that it is appropriate (Cairns and Cairns 1976). The full creativity of scalar humor makes use of constructional pragmatics, along with other domain-general mechanisms like imagery and metaphor. These same mechanisms are responsible for creating the humorous effect of scalar humor utterances, by evoking an incoherence and allowing it to be resolved.

By way of conclusion, here are some morals to be drawn from the present work. Generative creativity is only part of the human capacity for creative language use. Interestingly, full creativity seems to be the product of constrained and structured principles that make use of general purpose cognitive mechanisms. This illustrates the importance of the embodiment of the human language system – only when embedded in a larger cognitive and physical context are predominantly linguistic capacities able to function.

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