

Re: Equivalence relations and "is a sibling of"

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- *From:* sttscitrans@xxxxxxxx
 - *Date:* 10 Jul 2006 10:24:23 -0700
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Arturo Magidin wrote:

In article <1152475103.311196.128470@xx>, <sttscitrans@xxxxxxxx> wrote:

[.snip.]

Naturally, if you →redefine← the word "sibling" to mean something else, then the nature of the relation "is a sibling of" changes accordingly. But under the common interpretation of "sibling", you need two or more, so a person is not a sibling of him or herself.

Yes, it is true to say native speakers would be puzzled by "I am an only child and this is my sibling (pointing to myself)" but they would also be puzzled by "I am as tall as myself" or "I have the same colours of eyes as I/we do"

The point is not that a "native speaker" might be puzzled. The point is that the meaning of "sibling" is very specific, and it is NOT, as you claim "have the same parents as".

If you were to give as an example the relation on the set of human beings defined by xRy if and only if x and y have the same biological parents, then this is a relation which is DIFFERENT from the relation " xSy if and only if x and y are siblings". You claimed originally that the latter was in fact the same as the former, but it is not. The term "is a sibling of", in English, requires that the two compared items be DIFFERENT. By contrast, "the same X as" does not have such a linguistic requirement. I am not contrasting the natural language use with mathematical use (I have enough of that with the connective "or" to know they are not identical). The point is that the notion of "sibling" comes with a

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built-in prohibition against reflexivity, by the very meaning of the word, where as "the same XXXX as" does not.

As I pointed out: if you REDEFINE the word "sibling" to mean "having the same parents", then you would indeed have a point. But that requires you to REDEFINE the term. If you consider the relation given by the meaning of the word, it is irreflexive.

As you say "the word "sibling" does not apply to one person alone" but then neither does "as tall as" etc.

That is where you are wrong. "Sibling" is explicit in its definition in excluding reflexivity. By contrast, "tall" certainly does not: tallness is an abstract measurement, and when you say "as tall as" you are comparing those abstract measurements. "The same XXXX as" does not preclude reflexivity; if you want to interpret "sibling" as meaning "the same biological parents" (which is NOT the standard meaning), then you'd be correct, but you would be using the term "sibling" as a term of art, rather than via its standard meaning. By contrast, when you say "the same height as" or "as tall as", you are using each and every word in its ->standard<- meanings, even if you are applying it in ways in which, in natural every day common language, you would not.

Either way the mathematical formulation of the relations adds a sense that is not present in the usual natural language contexts.

"I have the same parents as myself"
and
" I am the same height as myself"
seem equally implausible

Please read this carefully: "sibling" is NOT synonymous with "having the same parents. As I noted in quoting the definition of the word from the dictionary, it means "one of two or more XXXXXX".

I ->agree<- with you that the relation "having the same parents as" is reflexive. That is the point you make above. I am saying that your error lies in thinking that the relation "is a sibling of" and the relation "have the same parents as" is identical; it is not. "Sibling" carries a lot more linguistic baggage than "the same parents".

Yes, I basically agree with you now as I have realized that I was deluding myself into thinking that "is a sibling of" is transitive when, of course it's not.

As "is a sibling of" causes problems, how about " is a fellow

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disease sufferer with ", $F(x,y)$

If you are the only person with a disease you are a "solitary disease sufferer"

analogous to an only child and if you share your disease with one or more sufferers other than yourself, you have fellow disease sufferers analogous to "siblings"

$F(x,y)$ means

$x \diamond y$ and x suffers disease D and y suffers disease D

which implies

$y \diamond x$ and y suffers disease D and x suffers disease D

which implies $F(y,x)$ and so F is symmetrical.

$F(x,x) \Rightarrow x \diamond x$ and x suffers disease D and x suffers disease D

which is false and so F is never reflexive.

Does $F(x,y)$ and $F(y,x) \Rightarrow F(x,x)$ and that F is transitive ? No, because it is not

true that $x \diamond x$.

On the other hand, if x,y,z are distinct

$F(x,y)$ and $F(y,z) \Rightarrow F(x,z)$.

Is this basically what you mean ?

This seems to explain why

"I am the oldest of my fellow cancer sufferers"

"I am the oldest of my siblings"

is acceptable and

"I am the oldest of my lovers "

is not.

The superlatives imply that at least three distinct people are involved. "is a sibling of" is "almost transitive" and symmetric, but "is a lover of", although symmetric, need never be transitive.

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