

Identity and Indeterminacy in *-ever* Free Relatives
Daphna Heller and Lynsey Wolter

An *-ever* free relative (FR) is felicitous only when the speaker doesn't know, or doesn't care about, the identity of the entity denoted. (1) is felicitous if, for example, the speaker doesn't know if Mary is cooking pea soup or spinach (although he may know it is green). That is, the basic level nominal (in the sense of Cruse 1977) must be undetermined. When an *-ever* FR contains a nominal head (2), it is the subordinate level nominal, e.g. spinach soup or pea soup, that is undetermined.

- (1) Whatever Mary is cooking uses onions. (Dayal's 27)
 (2) Whatever soup Mary is cooking uses onions.

Indeterminacy is also possible with respect to the actual identity of the entity. The speaker of (3) must not know who arrived last, so (3) cannot be used if the speaker knows it was Mary.

- (3) Whoever arrived at the party last brought the soup.

In sum, *-ever* FRs can introduce (i) non-rigidity, (ii) indeterminacy with respect to a basic level nominal category; or (iii) indeterminacy with respect to a subordinate level nominal category. In this paper, we argue that these types of indeterminacy cannot all be captured in standard models, and we develop a unified account using Geach's (1962) and Gupta's (1980) approach to transworld identity.

Indeterminacy in the standard model. Our point of departure in [R] is due to Dayal (1997), who follows Jacobson (1995) in assigning a definite description meaning to *-ever* FRs, adding the requirement that the value of the individual concept denoted by the FR will vary across the epistemic alternatives of the speaker (von Stechow 2000, Tiedemeyer 2005 modify Dayal's analysis to account for ignorance vs. indifference readings, but keep her indeterminacy requirement).

[R] **non-Rigidity.** Given an *-ever* FR denoting $\lambda w.\iota x[P_{\langle s, \langle e, t \rangle \rangle}(w)(x)]$, there exist epistemically accessible worlds w', w'' such that $\iota x[P(w')(x)] \neq \iota x[P(w'')(x)]$.

[R] correctly predicts (3) to be infelicitous when the speaker knows Mary arrived last. However, it faces two problems with respect to (1). **Problem A** is that (1) is incorrectly predicted to be felicitous in *Scenario 1* below, where the speaker knows that Mary is cooking soup but cannot rigidly identify the entity corresponding to this soup. **Problem B** is that (1) is incorrectly predicted to be infelicitous in *Scenario 2*, where, e.g., the speaker can point to the pot Mary is stirring (thus rigidly identifying an entity), but cannot identify what she is making.

	<u>the unique P in each world</u>	<u>nominal properties of these entities</u>
Scenario 1	d1 in w1, d2 in w2, d3 in w3	d1 is SOUP in w1, w2, w3
Scenario 2	d1 in w1, w2, w3	d1 is SOUP in w1, MEAT in w2, PASTA in w3

Condition [NV] requires variation in nominal predicates, by requiring that there is no nominal Q that applies to the entity denoted by the *-ever* FR across the epistemic alternatives of the speaker.

We assume that, for pragmatic reasons (see Cruse 1977), Q will range over basic level nominals in the default case and over subordinate level nominals when the FR contains a nominal head. Note that as it stands, (1) does not satisfy [NV] when the speaker knows that what Mary is cooking is green. It must be stipulated that Q ranges over nominal predicates, because neither the type of Q nor pragmatic considerations exclude verbal and adjectival predicates.

[NV] **N Variation.** Given an *-ever* FR denoting $\lambda w.\lambda x[P(x)(w)]$, there exists **no** $Q_{\langle s, \langle e, t \rangle \rangle}$ such that for every w in the epistemic alternatives of the speaker $Q(w)(\lambda x[P(w)(x)])$.

Although [R] and [NV] appear to capture our intuitions about indeterminacy, no combination of these conditions accounts for all of the facts. Requiring both [R] **AND** [NV] will solve Problem A by ruling out *-ever* FRs denoting non-rigid individual concepts whose values share a basic level nominal property, but will not solve Problem B. Requiring either [R] **OR** [NV] will solve Problem B by licensing *-ever* FRs denoting rigid individual concepts whose values have different basic level nominal properties, but Problem A will reappear. Finally, requiring [NV] alone will solve Problems A and B but introduce new problems for the interpretation of (3). In a scenario where the speaker overheard that Robin brought the soup, but doesn't know whether Robin is a man or a woman, (3) is infelicitous. This scenario satisfies [NV] because neither of the basic level nominals *man* and *woman* apply to the value of the FR in all of the speaker's alternatives, so (3) is incorrectly predicted to be felicitous. (Note that Q cannot be *person* because by uttering *whoever*, the speaker makes explicit that the entity is a person). Variation with respect to nominal properties alone is thus not sufficient to account for indeterminacy in *-ever* FRs. These problems lead us to conclude that the relevant indeterminacy requirement cannot be formalized in the standard model.

Principles of identity. The standard model has a single principle of identity whereby each entity is identical to itself. To account for classic puzzles of transworld identity, such as the problem of the statue and the clay, Gupta (1980) follows Geach (1962) in replacing this single principle with multiple, non-trivial principles of identity, whereby an entity is tracked across worlds as *the same N*. In this model, instead of a function from worlds into sets of individuals, 'common nouns' denote a function from worlds into sets of individual concepts (at type $\langle s, \langle \langle s, e \rangle, t \rangle \rangle$). The values of the individual concepts denoted by *soup* in w are the soups in w ; thus nouns, like other predicates, convey information about which entities in a world have a certain property. Nouns differ from other predicates in also tracking corresponding entities across worlds: the value of an individual concept i belonging to the denotation of *soup* denotes the same soup in every world.

Gupta's class of '*common nouns*' does not correspond to the syntactic class N. First, some Ns, e.g. stage-level nouns like *passenger*, do not introduce principles of identity and thus do not have a 'common noun' denotation. Second, some elements that are not Ns, e.g. proper names, provide principles of transworld identity and should thus denote 'common nouns'. For example, a speaker can introduce someone as *the same Robin we talked about earlier*, where the name, like other 'common nouns,' is a complement of *same*.

***-ever* FRs in the Geach-Gupta model.** We continue to analyze *-ever* FRs as definites. Our indeterminacy condition is superficially similar to [NV], but it requires variation with respect to Gupta-nouns G (type $\langle s, \langle \langle s, e \rangle, t \rangle \rangle$) that provide principles of identity. As before, we take a pragmatic constraint to cause G to range over basic level Gupta-nouns in the default case.

[GV] G Variation. Given an *-ever* FR denoting $\lambda w.\lambda x[P(x)(w)]$, there exists **no** $G_{\langle s, \langle \langle s, e \rangle, t \rangle \rangle}$ such that for every w in the epistemic alternatives of the speaker $G(w)(\lambda w.\lambda x[P(w)(x)])$.

[GV] correctly predicts (1) to be infelicitous if the speaker knows that Mary is making soup. In this case, for every accessible world w , the entity denoted by the FR in w will be tracked as a soup across worlds. Furthermore, [GV] correctly predicts (3) to be infelicitous if the speaker knows that Robin brought the soup, even if the speaker is not sure whether Robin is a man or a woman, as the entity will be tracked as *Robin* across worlds. This condition therefore unifies indeterminacy with respect to nominal properties with non-rigidity where appropriate.

Conclusion. The indeterminacy requirement of *-ever* FRs provides a window into the conception of identity in natural language. This conception, where either names or nominal properties may establish the identity of an entity, constitutes compelling evidence for a Geach-Gupta approach to transworld identity.

References.

- Cruse, D. Alan: 1977, 'The Pragmatics of Lexical Specificity', *Journal of Linguistics* **13**, 153-164.
- Dayal, Veneeta: 1997, 'Free Relatives and *-ever*: Identity and Free Choice Readings', in A. Lawson and E. Cho (eds.), *Proceedings of SALT VII*, pp. 99-116, CLC Publications, Ithaca NY.
- von Stechow, Kai: 2000, 'Whatever', in B. Jackson and T. Matthews (eds.), *Proceedings of SALT X*, pp. 27-40, Ithaca, NY: CLC Publications.
- Geach, P. T. 1962. Reference and generality. Ithaca, NY: Cornell UP.
- Gupta, Anil: 1980, *The Logic of Common Nouns: An Investigation in Quantified Modal Logic*, Yale University Press, New Haven.
- Jacobson, Pauline: 1995, 'On the Quantificational Force of English Free Relatives', in E. Bach, E. Jelinek, A. Kratzer and B. Partee (eds.), *Quantification in Natural Language*, pp. 451-486, Kluwer Academic Publishers, Dordrecht.
- Tredinnick, Victoria: 2005, *On the Semantics of Free Relatives with '-ever'*, Ph.D. dissertation, University of Pennsylvania