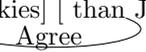


A long-distance morphosyntax and semantics for comparative clauses

Introduction. We propose a new analysis of the morphological and semantic relations between expressions like *-er/as* and their clausal dependents headed by *than/as*. These relations have traditionally been analyzed as involving complementation, either followed by obligatory extraposition [B73] or via countercyclic late merger [BP04] (to explain e.g. **J ate more than M did cookies*). On our approach, *than/as* clauses merge at a distance, adjoining to phrases containing *-er/as*. We derive the observed dependencies via an Agree relation whose semantic counterpart is λ -abstraction over an implicit argument. This analysis captures well-known as well as new observations, and also suggests a novel perspective on the semantic significance of Agree.

Syntactic analysis. We propose that *than/as*-phrases (be they clausal or not) adjoin to either the NP or VP that hosts the degree head *-er/as* [cp. A12]; see (1) for adnominal modification. The heads of these phrases bear an uninterpretable feature that is valued by *-er/as* (just as adjectives in some languages will bear the person/number/gender features of the nominals that they modify, following PT04). The form (*than* or *as*), qua probe, is determined by the particular comparative head serving as the goal. This sketch of our approach captures the two basic facts about comparatives in English: 1) The morphological relation e.g. between *than* and *-er*, and 2) the non-adjacency of those same elements.

- (1) M ate [_{NP} [_{NP} more cookies] [_{than} J did]].


Syntactic predictions. We predict that *than*-phrases should pattern like adjuncts, and the morphological relation to *-er* should pattern like other instances of non-local agreement. It is possible for *than*-phrases to be absent from the sentence, (2), like other adjuncts. The *than*-phrase can appear to the right of an extraposed element in a way that an argument cannot, cp. (3a)-(3b), even if that argument could have merged late to a QRed element (as in BP04), (3c). Furthermore, ACD-avoidance and scopal flexibility follow if *than/as*-phrases extrapose to VP (not shown here). Finally, unlike agreement based on selectional relations, which is obligatory over disjunction (4b), comparatives and equatives display closest conjunct agreement (4a).

- (2) M owns twenty dresses. J owns more/as many suits.
 (3) a. J wrote more similar t_i books [to mine]_i [than anyone else].
 b. *J wrote similar t_i books t_j [to mine]_i [of poetry]_j
 c. *J wrote every similar t_i book t_j [to mine]_i [of poetry]_j
 (4) a. J is as tall or taller [than/*as anyone else]
 b. *J claimed or wondered [whether/that anyone was there]

Implicit arguments. New evidence suggests that the semantic dependence between *than/as* clauses and *-er/as* is indirect, mediated by an implicit argument. Sentences exhibiting null complement anaphora (NCA) contain expressions like *win*, *notice*, or *ready* which have a syntactically unexpressed, (definitely-interpreted) semantic dependent [P89; disc. & refs in W12]. Interpretations with NCA are distinct (i.e., \neq) from silent existential closures (5), overt pronouns (6), demonstratives (7), or syntactic elisions (8).

- (5) **Context** There was a chess match.
 a. John won. \neq John won **something**.
 b. John ate. \sim John ate **something**.
 (6) Whenever M shaves her head, J notices. \neq Whenever M shaves her head, J notices **it**.
 (7) M is ready and M is not ready. \neq M is ready **for this** and M is not ready **for that**.
 (8) **Q** Who_i have the investigators noticed t_i was lying?
 a. I'd rather hear who_i you have noticed t_i .
 b. \neq I'd rather hear who_i you have noticed t_i **was lying**.

Examples (9)-(12) show that comparatives pattern like sentences with NCA.

- (9) **Context** J ate some cookies.

M ate more/as many pies. $\not\sim$ M ate more/as many pies **than some amount**.

- (10) Whenever J enters a mountain-climbing competition,
 a. he vows to climb more/as many mountains next time.
 b. $\not\sim$ he vows to climb more **than that**/as many **as that** next time.
- (11) a. M ate more cookies and she ate less cookies.
 b. $\not\sim$ M ate more cookies **than this** and she ate less cookies **than that**.
- (12) Who_i did the baker bake more pies than t_i ?
 a. I'd rather hear who_i you have baked more pies.
 b. $\not\sim$ I'd rather hear who_i you have baked more pies **than** t_i .

Semantic analysis. For simplicity, we focus on $\llbracket\text{-er}\rrbracket$ in the nominal context. On measure function-based approaches [e.g. K99], $\llbracket\text{-er}\rrbracket$ is $\lambda g \lambda d \lambda x. g(x) > d$, with an explicit λ over the semantic value of the *than*-clause, and g ranging over measure functions of type $\langle e, d \rangle$. On our approach, the right-hand side of $>$ is a definite of type d that contains a variable δ over contextually-provided degree functions (i.e., type $\langle d, t \rangle$).

- (13) a. $\llbracket\text{-er}\rrbracket^A = \lambda g \lambda x. g(x) > \iota d[A(\delta)(d)]$ $\langle \langle e, d \rangle, \langle e, t \rangle \rangle$
 b. $\llbracket\text{many}\rrbracket^A = \lambda x. \mathbf{number}(x)$ $\langle e, d \rangle$

Context alone can make a degree function salient, e.g. by an utterance like (14a). Followed up by e.g. (14b), that function is interpreted as the value of $A(\delta)$, whose degree argument will be bound by ι .

- (14) a. M owns some dresses. $\rightsquigarrow \lambda d. \mathbf{number}(\text{suits-M-owns}) \geq d$
 b. J owns more suits. \top iff $\mathbf{number}(\text{suits-J-owns}) > \iota d[A(\delta)(d)]$

When present, comparative clauses necessarily value δ . We posit that this is the result of a rule that λ -abstracts over δ , (15), assigning the complement of *than/as* (type $\langle d, t \rangle$ on standard assumptions) to δ . A derivation of an NP is given in (16), with the *than*-clause given schematically. In the paper, we show how this works with adjectival and verbal comparatives, as well as with disjunctions like (4a).

- (15) $\llbracket\text{XP [than/as CP]}\rrbracket^A = \llbracket\text{XP}\rrbracket^A[\delta \rightarrow \llbracket\text{CP}\rrbracket^A]$
 (16) more cookies than J did
 a. $\llbracket\llbracket\text{than}_P \text{ than John did (eat cookies)}\rrbracket\rrbracket^A = \lambda d. \mathbf{number}(\text{cookies-J-ate}) \geq d$
 b. $\llbracket\llbracket\text{Deg}_P \text{ many -er}\rrbracket\rrbracket^A = \lambda x. \mathbf{number}(x) > \iota d[A(\delta)(d)]$
 c. $\llbracket\llbracket\text{NP more cookies}\rrbracket\rrbracket^A = \lambda x. \mathbf{cookies}(x) \ \& \ \mathbf{number}(x) > \iota d[A(\delta)(d)]$
 d. $\llbracket\llbracket\text{NP...}\rrbracket\llbracket\text{than}_P\text{...}\rrbracket\rrbracket^A = \lambda x. \mathbf{cookies}(x) \ \& \ \mathbf{number}(x) > \iota d[\mathbf{number}(\text{cookies-J-ate}) \geq d]$ by (15)

Conclusions and prospects. We propose an adjunction- and agreement-based syntactic analysis of the dependency between *-er/as* heads and *than/as* phrases that captures familiar as well as novel data simply. The cost of this syntactic simplicity is positing λ -abstraction without movement in the compositional semantics, one that allows subsequent adjuncts to bind implicit arguments of heads in its scope. Yet, there is evidence that such a rule will be necessary for NCA generally, e.g. consider the interpretations of (17). Finally, future research should investigate whether this rule, so far unbounded, is subject to locality effects.

- (17) a. John won even though he didn't want to compete in the race.
 b. Nobody noticed when John walked into the room in a clown suit.
 c. Tipper was ready, despite the fact that she hadn't been told in advance that there was going to be an interview.

Selected references. A12 Alrenga, Kennedy & Merchant 2012. A new standard of comparison. *WCCFL*. BOS04 Beck, Oda & Sugisaki 2004. Parametric variation in the semantics of comparison. *J of E Asian Ling*. BP04 Bhatt & Pancheva 2004. Late merger of degree clauses. *LI*. B73 Bresnan 1973. Syntax of the comparative clause construction in English. *LI*. K99 Kennedy. *Projecting the Adjective*. P89 Partee 1989. Binding implicit variables in quantified contexts. *CLS*. PT04 Pesetsky and Torrego 2004. Tense, case, and the nature of syntactic categories. In *The syntax of time*. R13. Similitives and the argument structure of verbs. *NLLT*. vS84 von Stechow 1984. Comparing semantic theories of comparison. *JoS. SALT*. W12 Williams, Alexander 2012. Null Complement Anaphors as definite descriptions. *SALT*.