A lexicalist account of implicit (bound) contextual dependence

This paper outlines proposals for a compositional account of implicit (bound) context dependencies in noun phrases by exploiting the idea of a flexible lexicon (as in the generative lexicon tradition) and Jacobson's variable-free semantics.

Implicit context dependencies occurring in noun phrases are well-known. Eg, (1)a would normally be construed so that the domain of quantification is some contextually determined set of bottles. For (1)b, on the natural interpretation, 'every guest' has become quantificationally dependent on the subject noun phrase (as glossed in (1)c):

(1) a. Every bottle was green
b. Every hostess received a gift from every guest
c. $\forall xy[\text{hostess}(x) \wedge \text{guest\_of}(x)(y) \rightarrow \exists z[\text{gift}(z) \wedge \text{received\_from}(y)(z)(x)]]$

Currently prominent treatments of this phenomenon involve an idea deriving from Kaplan whereby linguistic elements which are context dependent are treated as functions from contexts to contents. When it comes to complex noun phrases, two versions of this idea are available and both are problematic. Westerstahl (1985) proposes that *only complex DPs themselves are context dependent* (i.e. functions from contexts to generalised quantifiers restricted by contextually determined sets). As Stanley & Szabo (2000) point out, this treatment is less than compositional; plus there is no straightforward way of dealing with (1)b. S&S propose a version the alternative *hidden variable account* where the common noun head of any DP dominates a complex linguistic construction pairing the common noun itself and a complex of a type <<e,<e,t>> function variable and an individual variable argument of that - where the interpretation is intersective.

(2) $[_{DP}\text{every } [_{NP}[_{N}<\text{guest}, f(x)>]]$ $(\llbracket<\text{guest}, f(x)>\rrbracket = \llbracket\text{guest}\rrbracket \cap \llbracket f\rrbracket^{c}(\llbracket x\rrbracket^{c}))$

Where there is no implicit bound dependency, S&S suggest the individual variable is assigned to the speaker. This seems slightly ad hoc. More seriously, intensional modification poses severe problems for S&S since the contextual restriction sometimes appears inside, (4), and sometimes outside, (3), the scope of the modifier:

(3) a. Every former girlfriend of Bill was asked to leave the party.
b. Every fake diamond was traced to its original vendor.

(4) Our boss sends every former employee a Christmas card.

Worse still, it is possible that there can be more than one implicit quantificational dependency. On the relevant construal, 'every$_z$ mistake' in (5) is understood as 'every$_z$ mistake x makes on a paper y examines':

(5) Every$_x$ student thinks no$_y$ examiner will notice every$_z$ mistake

It is not difficult to imagine an appropriate context for (6)a which results in one bound dependency inside the scope of the intensional operator and one outside; viz 'every$_z$ (forged (painting by x)) coming into y's possession'. For (6)b both dependencies would be outside the scope of 'former'. For (6)c both would be inside the scope:

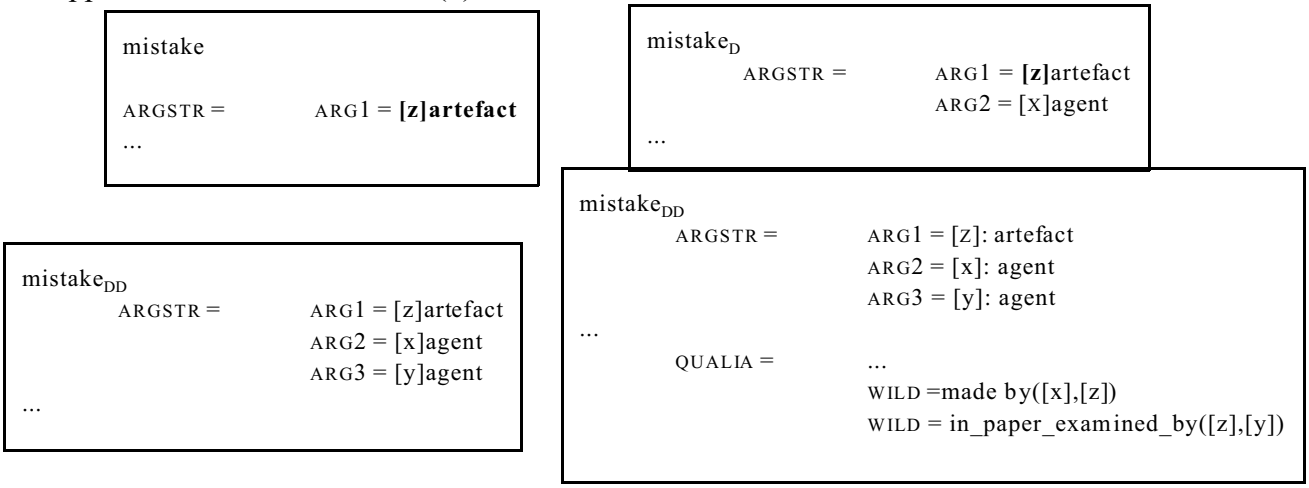
(6) a. Every$_x$ artist thinks no$_y$ dealer will stop at selling every$_z$ forged painting.
b. Every$_x$ parole officer thinks no$_y$ employer will recognise every$_z$ former convict.
c. Every$_x$ government knows no$_y$ watermarking will prevent the circulation of every$_z$ counterfeit note.

We seem to need to assume that DP structures contain a plethora of hidden variables at different levels which are vacuously assigned (to what?) when not used. We take this as something of a reductio and investigate what kind of alternatives there are to the standard mode of explanation.

One alternative (usually attributed to Russell) involves analysing context dependence not at the level of linguistic semantic description but as 'definition-in-use'. Here we motivate two lexical mechanisms for dealing with this data.

The first allows for contextual narrowing of the extension of lexical items generally. Though not essential to the proposal, we will indicate how this would work in a Pustejovsky-style generative lexicon by positing wild-card qualia entries. Wild card entries partially define the lexical items with extra conditions but are given a vacuous default value. This can be overridden where required by context - as in Lascarides and Copestake's (1999) typed default feature structure framework. For (1)a, 'bottle' would have a wild-card qualia filled with information about location ('on shelf x at t'). As an <<e,t>,<e,t>> intensional operator, 'fake' (or 'former') can also be subject to this treatment - expressing a function from properties, P, to properties of individuals, x, such that x is not a P but relevantly similar and also x has some contextually specified property. This would allow for the implicit dependency appearing outside the scope of 'fake' in (3)b.

The second mechanism presumes that the combinatorial system is constrained by categorial-style rules and principles - including Jacobson's (1995) Geach-rule for passing binding dependencies up a tree and her Z-rule for binding these off. To these we add a lexical rule, the D-rule, which takes a lexical entry with category X and forms a new entry with category X^Y, for any Y. According to general principles, the new, dependent item will be type <a,b> where a is the type for category Y and b the type for X. The lexical manipulation associated with this rule involves adding an appropriate entry to the argument structure of the original item. We assume a general rule whereby the type of the role of binder and bindee match. The first three boxes below suggest the stages in the two applications of the D-rule for (5) above. The fourth box reflects the results contextual resolution:



We discuss the proposal that all binding dependencies in noun phrases, including for pronouns, involve the D-rule - although wild card qualia would totally define pronouns**.**

References:

Jacobson, P. 1995. The Syntax/Semantics Interface in Categorial Grammar. In S. Lappin (ed.) *Contemporary Semantic Theory*. Oxford: Blackwell.

Lascarides & Copestake 1999 Default representation in constraint-based f/ws. *Comp. Ling.* 25.1

Stanley, J. and Z. Szabo 2000. On quantifier domain restriction. *Mind and Language* 15:219-261.

Westerstahl, D. 1985. Determiners and context sets. In J. van Benthem & A. ter Meulan (eds.) *Generalised Quantifiers and Natural Language*. Dordrecht: Foris.