

Contextual Variables as Pronouns

I argue that the behavior of the contextual variable (C) associated with quantificational expressions like *every*, *most* or *always* (cf. von Stechow 1994, 1995; Westerståhl 1985) reduces to the behavior of pronouns. The syntax and semantics of C thus makes use of independently needed tools, and the task of language acquisition is easier on the child.

The argument is made on the basis of the properties of bound C (for a study of free occurrences of C, see Martí 2002). In (1), the C of *no* is bound (Heim 1991; von Stechow 1994, 1995):

(1) [Only one class]_i was so bad that no(C_i) student passed the exam

(1) means that only one class *x* was so bad that no student in *x* passed the exam. Following von Stechow, I assume that C is decomposed into a function and an argument (f(x)), where the argument gets bound and the value for the function is provided contextually. This analysis raises the question of whether the semantics of C is really reducible to the semantics of pronouns. Recent work (Elbourne 2002), however, suggests that pronouns should be decomposed into a function-argument structure (where the argument variable gets bound in bound readings), so the reduction of C to pronouns is very much feasible, and hence desirable.

An argument that C (or, more appropriately, the argument of the function introduced by C), and not some other variable, is bound in (1) is needed: *student* is a relational noun and can have an implicit variable of its own (e.g., Barker 1991; Barker&Dowty 1992). Below, the variable of a relational noun cannot be what gets bound, since the argument of the noun is filled ((2)) or a non-relational noun ((3)) or adverb of quantification (i.e., no noun at all) ((4)) are used:

(2) The business professors met to discuss the companies with which the School of Business has contacts. Several professors have close contact with several company representatives. [Most professors]_i admire every(f(x_i)) representative of Kodak

(3) [Most classes]_i were so bad that no(f(x_i)) men passed the exam

(4) [Most weekends]_i were so sunny and warm that I always(f(x_i)) worked in the garden

One argument that the behavior of C is like that of pronouns is that principles that constrain binding relations with pronouns in English, such as Weak Crossover (WCO) (e.g., Koopman & Sportiche 1983; Wasow 1972), constrain binding relations with C as well. Bound-variable readings are not possible when the trace of the binder does not c-command the bindee ((5)); binding of C is subject to the same constraint ((6)):

(5) a. Who_i t_i loves his_i mother?

b. Who_i does his_{j/*i} mother love t_i?

(6) a. Many flights arrived late on Friday. The airlines whose planes landed late decided to provide additional compensation for the families flying with them. We are trying to find out [which airlines]_i t_i ended up compensating every(f(x_i)) family

b.[context as in (6a)] We are trying to find out [which airlines]_i every(f(x_{j/*i})) family has already contacted t_i for compensation

Importantly, the same exceptions to WCO with pronouns are found with C. Some exceptions to WCO in English are that a pronoun in an adjunct clause can be bound even when the trace of the binder doesn't c-command it ((7a)) and that a PRO controlled by the binder can do the binding ((7b)). The same exceptions arise with C ((8)):

(7) a. [Who_i did [Jan say [she admired t_i][in order to please him_i]]]? (Lasnik & Stowell 1991)

b. PRO_i seeing his_i father pleased [every boy]_i (Higginbotham 1980)

(cf. Mary's seeing his_{j/*i} father pleased [every boy]_i)

(8) a. [context similar to (6)] [[Which airline]_i did [Jan say [she admired t_i][because of how they treat every(f(x_i)) family]]]?

b. [context similar to (6)] PRO_i contacting every(f(x_i)) family benefited [most airlines]_i
(cf. Mary's contacting every(f(x_j/*_i)) family benefited [most airlines]_i)

Binding of pronouns is more constrained in Chinese than in English (Higginbotham 1980, Huang 1982). Another argument that the behavior of C reduces to that of pronouns is that binding of C is more constrained in Chinese too. *Whose* can bind *his* or C (another exception to WCO; (9)); however, *shei* 'whose' cannot bind *tade* 'his' ((10)) or C ((11)) (cf. ((12))):

(9) a. [Whose_i picture]_j t_j incriminated his_i mother? (from Safir 1996)

b. Three airlines owned by three people, Jonathan Smith, Kelly Thornton, and Ruth Cole, have had problems with the families flying with them. The families claimed that the airline overcharged them. They lied and we are wondering [*whose_i airline*]_j t_j *sued every(f(x_i)) family*

(10) [Shei_i de muqin]_j t_j kanjian-le tade_k/*_i qizi?

who DE mother see-Asp his wife 'Whose mother saw his wife?'

(11) [The linguistics students met to discuss the courses they took in the spring. At the end of the meeting, the president asked...]

[Shei_i de muqin]_j t_j mei-men(f(x_k/*_i)) kecheng dou xihuan?

who DE mother every-CL course all like 'Whose mother likes every course?'

(12) a. Shei_i t_i kanjian-le ta_i muqin?

who see-Asp he mother 'Who saw his mother?'

b. [context as in (11)] Shei_i t_i mei-men(f(x_i)) kecheng dou xihuan?

'Who likes every course?'

In (11) and (12b) *mei-men kecheng* is displaced to the left of the verb. I assume, following Lin 1998, that such NPs move to the specifier of a *dou*-phrase overtly, a position still c-commanded by the trace of *shei* ((12b)) or *shei de muqin* ((11)) (simplifying slightly).

That binding of C has the same properties as binding of pronouns suggests that C is a syntactically-active object (at least, if WCO is a syntactic constraint and pronouns are syntactically active). However, Partee 1989 argues that the contextual variables of words like *local* or *opposite* are not syntactically active. Her claim is based on the contrast in (13), where what looks like the overt version of the variable of *opposite* differs from the covert version:

(13) a. Not everyone who thinks their parents did a bad job of bringing them up actually switches to the opposite child-rearing method

b. *Not everyone who thinks their parents did a bad job of bringing them up actually switches to the child-rearing method opposite to it

This claim, however, is based on two assumptions that are not justified: a) contextual variables have overt realizations, and b) there is only one way to express difference between them. Thus, there is no reason for not assuming that the contextual variable of *opposite* is syntactically active. There seems to be no reason for not assuming the syntactic presence of C either.

Barker 1991 Ph.D. diss., UCSC| Barker&Dowty 1992 Non-verbal..., *NELS* 23| Elbourne 2002 Ph.D. diss., MIT| Heim 1991 Artikel & Definitheit, *Semantik*| Higginbotham 1980 Pronouns & bound variables, *LI* 11| Huang 1982 Ph.D. diss., MIT| Koopman&Sportiche 1983 Variables and the bijection principle, *TLR* 2| Lasnik&Stowell 1991 Weakest crossover, *LI* 22| Lin 1998 Distributivity in Chinese and its Implications, *NLS* 6| Martí 2002 *Only...*, *NELS* 33| Partee 1989 Binding Implicit Variables in Quantified Contexts, *CLS* 1| Safir 1996. Derivation..., *LI* 27| von Stechow 1994. Ph.D. diss., UMass; 1995. A Minimal Theory of Adverbial Quantification. *Context Dependence in the Analysis of Linguistic Meaning*| Wasow 1972. Ph.D. diss., MIT| Westerstahl 1985. Determiners & Context Sets. *Generalized Quantifiers in Natural Language*