The Acquisition of Pronouns in English:
Evidence for a Uniform Semantics of Pronouns, Indexicals and the Definite Determiner

Saskia Ottschofski, University Tübingen

In this paper, I provide evidence from first language acquisition (FLA) that puts concurring theories on the interpretation of pronouns and indexicals to a test. With the help of longitudinal corpora of three monolingual English speaking children, evidence strongly suggests to treat pronouns, as well as indexicals, as definite determiners (Elbourne 2013).

The Theory In a static framework of semantics, two distinct theoretical explanations for the interpretation of both pronouns and indexcials prevail: The classical view divides pronouns and indexicals into two different phenomena: Pronouns are seen as variables that receive a value through a variable assignment function g(Heim and Kratzer 1998), whereas indexicals are values that are directly provided by the context (Kaplan 1989). Elbourne (2005,2013) however, makes a different claim: In his framework, pronouns are interpreted as definite determiners. It has already been shown that this framework can be extended to cover also indexicals, even though this is far from being common practice (Nunberg 1993, Grosz and Zobel 2014):

(1)

The classical view (V+I)	pronouns as definite determiners (DefDet)
$[\![\text{he}_1/\text{she}_1]\!]^{g,c}= \text{g}(1)$ $[\![\text{I}]\!]^{g,c}= \text{c}_s$ $[\![\text{the}]\!]^{g,c} = \lambda f_{<e,t>}.\exists!x[f(x)].\iota y[f(y)].$	$[\![\text{he}_1/\text{she}_1]\!] = [\![\text{I}]\!] = [\![\text{the}]\!] =$ $\lambda f_{<e<s,t>>}.\exists!x[f(x)(g(\sigma_n))].\iota y[f(y)(g(\sigma_n))].$

The two theories thus make different predictions regarding FLA: Whereas for V+I, the three phenomena don't depend on each other in their semantic build-up, for DefDet, pronouns not only have to correlate in acquisitional age with indexicals, but also with the definite determiner. The predicted acquisitional order according to DefDet has to account for the different kinds of arguments each determiner takes: *The* takes an overt NP, pronouns a covert or deleted NP and indexicals take two contextually determined values, a relation and an index(Nunberg 1993). For V+I, there is no systematic acquisitional order of the three phenomena. Instead, considerable intervariation regarding acquisitional age between different children should be observed. On the basis of these theoretically given differences, two hypotheses regarding acquisitional order arise, that are based upon the two basic assumptions of conservativity and ordered acquisition (Snyder 2007):

V+I: independent order: Every child should show a different order in acquisition of definite determiner, pronouns and indexicals.

DefDet: dependent order: definite determiner $\leq$ pronouns $\leq$ indexicals
The definite determiner can't be acquired later than pronouns, pronouns can't be acquired later than indexicals.

The Acquisitional Landscape There have been various studies on the acquisitional order of pronouns(c.f. Cruttenden 1977, Halliday 1975, Huxley 1970, Deutsch and Pechmann 1978). However, most literature misses out on the deciding connection between theory and acquisitional data: This study explicitly wants to combine new insights of formal semantics with acquisitional data by providing theoretically-motivated hypotheses that are then tested and that can differentiate between the two concurring theories, V+I and DefDet. Only on this basis can additonal theoretical implications for phenomena directly related to the interpretation of pronouns, e.g. bound pronouns, fake indexicals, deferred reference readings, and donkey pronouns be formulated.

The Data In a study of three longitudinal corpora of monolingually English speaking

children, Naomi, Lily and Naima, taken from two corpora made available through the CHILDES database (Sachs and Providence), I tested for the age of acquisition of free and bound uses of all relevant pronouns, indexicals and the definite determiner. As age of acquisition I take the first correct adult-like use of each item that is soon followed by regular use(see Snyder 2007). The pronouns I concentrated on where the 3rd person pronouns *it*,*he* and *she*(other pronouns with case marking were elicited but for current purposes not taken into account) and the indexicals I tested were *I* and *you* (all other indexicals that carry case-marking where elicited but for the purposes of this study not yet taken into account), as well as the definite determiner *the*.

The Results As shown in table 2, pronouns, indexicals and the definite determiner are all acquired simultaneously, with only few significant differences in the order of acquisition, calculated with Binominal Tests: For Lily and Naomi, *you* is acquired significantly later than *I* (Lily: p<0,001 and Naomi: p<0,001). Only for the Naima-corpus, a significant difference between the acquisition of *it* and *he* could be found with the help of a binominal test (p=0,0023) and a similar but only marginal difference of *it* and *he* in Naomi's corpus (p=0,06).

(2) First Use, soon followed by regular use:

	Lily	Naomi	Naima
I	1;10	1;10	1;5
you	2;1	1;11	1;8
he	1;11	1;11	1;8
she	2;2	2;5	1;7
it	1;11	1;10	1;6
the	1;10	1;10	1;4

The Discussion First Data on the acquisition of pronouns and indexicals reveals that none of the three children acquire the definite determiner later than pronouns or indexicals. From the point of view of the independent order in V+I, this result is surprising, as here, we expected high variation regarding the Age of Acquisition of the three phenomena. But as the results are constant among the tested children, they speak for the dependency between the acquistion of the definite determiner and pronouns and indexicals and thus favor DefDet.

The Conclusion This paper wants to highlight the importance of combining formal semantics with acquisitional data, as only the combination can reveal new insights into the acquisition of pronouns. The present data suggests a strong dependency between the semantics of definite determiners and pronouns along with indexicals: For each child, the definite determiner is acquired no later than pronouns and indexicals. Especially regarding the ordering between definite determiners and indexicals, these data reveal that the DefDet account has to be extended to cover also the semantics of indexicals.Thus, the data confirms the importance of a uniform treatment of the three phenomena.

Selected References: Elbourne.2005. *Situations and Individuals.* Cambridge, MA: MIT Press.· Elbourne.2013. *Definite Descriptions.* Oxford: OUP.· Heim and Kratzer.1998.*Semantics in Generative Grammar.*Oxford: Blackwell. Grosz and Zobel. *A (Non-)Uniform Approach to Pronominal Semantics.* ESSLLI 2014: Handout. Tübingen.· Snyder.2007.*Child Language.The Parametric Approach.*Oxford:OUP.