Reflections on Motherese

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1. Introduction

Motherese, the special register used by adults when addressing young children, is a well-established property of adult-child interactions in many different cultures and languages. A long tradition of research into motherese dating back to the 70s has been primarily concerned with the role of motherese as a potentially simplified register that might facilitate language development or communication (cf. Snow and Ferguson 1977). This issue is part of the broader question of the effects of input on language acquisition. In this paper I will focus on some grammatical properties of motherese involving the use of speaker/addressee names in place of 1st and 2nd person pronouns, illustrated in (1). In (1a, b) the child is being addressed by her mother and in (1c) the mother responds to the child's order. (Examples from Durkin et al. 1982)

(1) a. That's a saucer, saucer, mummy's saucer.
b. It's looking at Gail. (Gail = child)
c. Dawn: Put back.
Mother: You want mummy to put back.

This phenomenon, which I will refer to as 'mommy deixis' or MD for short, has a number of interesting binding-related properties. In section 2, I will outline these properties and propose an analysis. In section 3, I will discuss the possible pragmatic or functional role of this phenomenon.

2. Mommy Deixis

MD is pervasive in the language directed at infants and toddlers. [1] In a study by Durkin et al. (1982), 18 mother-child dyads including children ages 12, 18 and 24 months, were recorded for 10 minute sessions. Durkin et al. report that the mothers used proper names in place of pronouns at a mean rate of 6 times per session, more than once every two minutes. No significant effects were found for gender or age of the children. Wills (1977) observes that MD occurs in all syntactic positions and pragmatic contexts, including monologues and exchanges, instructions, corrections and commands, and it can be used with various 'tones', playful, affectionate, conversational, and stern.

MD is not restricted to English. In a recent study, Kiebzak-Mandera (2006) discusses the use of MD by Russian speakers. Examples are given in (2).

(2) a. Kirjusha budet rasskazyvat' mame knizhku?
'Will Kirjusha (= child) tell mummy the book?'
b. Varen'ka kopaet?
'Is Varen'ka (= child) digging?'

Similar examples are found in German (3a, b), Italian (3c, d), Japanese (3e), Farsi, (3f), Dutch (3g, h) and European Portuguese (3i, j).[2]

(3) a. Hat der Nikolai Hunger?
has the Nikolai hunger
'Is Nikolai (= child) hungry?'
b. Du bist Mamis Engelchen.
'You are Mommy's little angel.'
c. Vieni qui dalla mamma.
'Come here near mommy.'
d. Ernesto è propio monello oggi.
Ernesto is really brat today
'Ernesto (= child) is really a brat today.'
e. Mama Mina-chan, daisuki.
mommy Mina loves
'Mommy loves Mina (=child) a lot.'

f. Bia, bebin, maman dasteshro borid.
come, see, mama hand cut
'Look, see, mommy cut her hand.'
g. Mama zal de auto wel even maken.
Mommy will the car yes in-a-second repair
'Mommy will repair the car.'
h. Mark mag het doen.
Mark may it do
'Mark (= child) may do it.'
i. Dá a chucha à mãe, dá.
give the pacifier to+the mother, give
'Give the pacifier to mommy.'
j. A Inês costuma segurar no baton da avó, não é?
the Inês uses to keep the lipstick of grandmother, not is
Inês (= child) uses (it) to keep Grandma's lipstick, isn't it?

2.1. Proper names and pronouns in MD

In non-child directed (henceforth NCD) adult language, proper names are R-(eferring) expressions whose distribution is governed by condition C of the binding theory (Chomsky 1981). Condition C states that an R-expression (definite description or proper name) cannot appear in the scope of a coreferring NP. Violations of condition C are particularly bad when the R-expression is in the scope of a pronoun, as in (4).

(4) a. *She's working in Melissa's garden.
b. *He said that Paul is a local hero.

In MD, proper names appear to have different binding or coreference possibilities, based on examples such as the following. (As before, these sentences were uttered by the mother to the child with intended coreference between *I* and *mommy / mummy,* as indicated by the underlining.)

(5) a. I'll wipe mummy's hand up. (Durkin et al. 1982)
b. I guess that mommy will have to clean up. (Hyams 1987)

What do we make of the grammaticality of the examples in (5)? It is instruc-

tive to compare (5a,b) to (6a,b).

(6) a. *Mummy will wipe my hand up.
b. *Mommy guesses that I will have to clean up.

As a first approximation, we can say that in MD a name may co-refer with a pronoun to it left, but not with a pronoun to it right. This formulation will get the contrast in (5) and (6), but it fails to capture the fact that with 3rd person pronouns normal binding relations hold, as illustrated in (7).

(7) a. Mummy will wipe her hand up.
b. Mommy guesses that she will have to clean up.
c. *She will wipe mummy's hand up.
d. *She guesses that mommy will have to clean up.

In (7a,b) *her/she* is free in its minimal binding domain (NP and S, respectively). In (7c,d) the R-expression *mummy/mommy* is bound in violation of condition C.

Comparing (6) and (7), we see that coreference possibilities are affected not only by the precedence relations, but also by the person features of the pronoun.[3]

Upon reflection, it is not surprising that 1st/2nd person pronouns behave differently from 3rd person pronouns given that 1st/2nd person pronouns bear a special relation to the discourse situation. Suppose we assume, roughly following Heim (1991) and Schlenker (2002), that 1st and 2nd person pronouns (*I, me, my, you,* etc.) are LF variables bound to discourse operators (speaker or hearer), as in (8) (SO = speaker operator). Under this assumption, the sentences in (5) and (6) have the following representations.

(8) a. SO_i [I_i'll wipe mummy$_i$'s hand up] (=5a)
b. *SO_i [mummy$_i$ will wipe my$_i$ hand up] (=6a)
c. SO_i [I_i guess that mommy$_i$ will have to clean up] (=5b)
d. *SO_i [Mommy$_i$ guesses that I_i will have to clean up] (=6b)

Given variable binding, the contrasts in (8) follow from the fact that (8b) and (8d) involve violations of strong crossover (SCO), parallel to the well-known

contrast in (9).

(9) a. Who$_i$ [t$_i$ thinks (that) he$_i$ is a local hero]
b. *Who$_i$ [does he$_i$ think t$_i$ is a local hero]

The SCO violation in (9b) is generally taken to be a condition C effect; the trace is an R-expression that is bound (by *he*) in the domain of its operator. On the assumption that the 1st person pronouns in (8) are LF variables, (8b,d) are similarly ruled out because the variable is bound (by *mommy*) in the domain of its operator, SO. On the other hand, the 3rd person pronoun is not operator-bound, hence not an R-expression and so the coreference possibilities in (7) follow straightforwardly from the binding conditions, as noted earlier.

Summing up, we have assumed that 1st (and 2nd) person pronouns are LF variables bound to discourse operators. Under this assumption, the interaction between 1st/2nd pronouns and proper names in MD is parallel to the relation between a *wh* operator and it trace, and is subject to SCO effects.[4]

2.2. Discourse related features and agreement

A property of MD noted in the previous section, but not directly addressed, concerns the person features of the coreferring pronouns in the examples in (5) and (7a,b) in which either a 1st or 3rd person pronoun is licit. This flexibility is even more perspicuous in tag questions, as in (10a,b), which typically impose a strict feature matching requirement, and in sentences such as (10c), which contain both a 1st and 3rd person pronoun (from Durkin et al. 1982).

(10) a. David (= child) mustn't do it though, must you?
b. Mummy put that up there, shall she?
c. I think mummy might have to blow hers.

To the extent that such examples are possible in NCD registers, an issue we return to below, we find a clear contrast between (11a) and (11b).[5]

(11) a. The author would like to thank her husband.
b. * I would like to thank the author's husband.

How do we explain the apparent agreement between the R-expression and the

1st person pronoun in motherese in sentences like (5)?

To address this issue I will appeal to a feature system that marks DPs for the discourse-related (DR) features [+/–s(peaker)][+/–h(earer)], as proposed in Schlenker (2002) (cf. also Vainikka and Levy 1999). According to this proposal, in NCD adult registers 1st person pronouns are specified [+s, –h], second person pronouns are [–s, +h] and 3rd person pronouns and R-expressions are [–s, –h]. Such a system strictly limits the coreference possibilities between R-expressions and pronouns to 3rd person forms because only the latter share the relevant feature specifications. In the language addressed to children, however, there is no such restriction. I will propose that in motherese, R-expressions that denote discourse participants are underspecified with respect to DR features. Thus, a participant name such as *mommy* is specified [αs, –h] and so may enter into coreference/agreement relations with a 1st person [+s, –h] or a 3rd person [–s, –h] pronoun.[6] On this view the central property that makes the sentences in (5) possible in motherese, but not in regular adult registers, is the availability in motherese of underspecification rules of the following sort:[7]

(12) a. [+speaker, –hearer] → [α speaker, –hearer]
b. [–speaker, +hearer] → [–speaker, α hearer]

3. An analogue in non-child directed adult registers

Examples like (11a) suggest that there is a kind of MD even in NCD adult registers. However, as Schlenker (2005b) notes, in NCD language there is generally a prohibition against R-expressions that denote the speaker or addressee. Consider, for example, (13a, b) vs. (13c) in a context in which John, a syntax professor, is speaking to Mary, a semantics professor (from Schlenker 2005a, b).

(13) a. #John / Mary is happy.
b. #The syntax / semantics professor is happy.
c. I am happy / You are happy.

For ease of exposition, I will refer to the prohibition against R-expressions that denote speaker/hearer as Prohibition P.

There are various proposals concerning the nature of Prohibition P. Schlenker (2005a), adopting a metaphor of a memory register that is constructed in the

top-down processing of a sentence, proposes that Prohibition P is essentially an interpretive principle of non-redundancy. He further suggests that Prohibition P is part of a "more general cognitive principle that requires that a new cognitive file should not be created for an object that is already stored in memory" (2005b: p. 3). On the assumption that speaker/hearer information is part of the initial speech act information associated with a sentence, an R-expression internal to the sentence that denotes the speaker or hearer would violate non-redundancy, giving rise to the strangeness of (13a,b).[8]

However, there are contexts in which Prohibition P is relaxed, as illustrated in (11). These are typically cases in which the use of the R-expression has some informational or expressive content beyond what would be provided by a 1st/2nd person pronoun alone (Bolinger 1977, 1979; Reinhart 1983; Safir 2004; Schlenker 2005b).[9] Some further examples are given in (14) (from Schlenker 2005b).

(14) a. In this reviewer's opinion, the paper is unsuitable for publication.
b. The Chair adjourns the meeting. (uttered by the Chair)
c. Ton père t'ordonne d'arretêter de fumer immédiatement!
'Your father orders you to stop smoking at once!'
(uttered by John's father while John is smoking)

In these sentences, the R-expression denoting the speaker provides expressive content that a simple pronoun could not. For example, Schlenker notes that the illocutionary force of (14c) is approximately the same force as: *I am your father* (a relevant authority) *and I order you to stop smoking at once.* In (14a) it is not simply the opinion of the speaker that the paper is unsuitable, but the opinion of the *speaker as reviewer*, and in (14b) the meeting is adjourned under the authority of the chairperson. In these cases, the position or identity of the speaker is part of the message being communicated.

It seems clear that just as in the examples in (14), the use of proper names to refer to discourse participants in motherese is intended to express more than what would be expressed by the simple use of a 1st/2nd person pronoun. Part of what is being conveyed to the child in MD examples in (1)–(3) is the identity or role of the speaker as mother, caretaker, or some other person of interest or relevance to the child. The examples in (5), in which the R-expression follows a pronoun, are suggestive of the memory register metaphor proposed by Schlenker (2005a); adults may be expressly redundant in order to clarify the reference of

1st and 2nd person pronouns, which pose acquisition difficulties because of their shifting reference.

A similar disambiguating function occurs in NCD registers with 3rd person pronouns (which share the DR features of R-expressions), as in (15) (adapted from Schlenker 2005b).

(15) John was so devoid of any moral sense that he forced Peter to hire John's girlfriend in his lab.

If the embedded possessive expression in (15) were *his girlfriend*, reference would be ambiguous between John's and Peter's girlfriend. The R-expression *John* is repeated (in violation of non-redundancy) to avoid the ambiguity. As Schlenker notes, the sentence is far worse when the ambiguity is removed by replacing *Peter* with *me*, as in (16). In this instance there is no communicative end that would be served by the redundancy and so Prohibition P is in full force.

(16) *John was so devoid of any moral sense that he forced **me** to hire John's girlfriend in his lab.

To sum up, in motherese, as in NCD adult language, the informativeness of the R-expression or the introduction of the speaker under a different guise (Heim 1998) trumps Prohibition P: R-expressions may refer to speaker/hearer in specific circumstances. Under similar pragmatic pressure, Principle C is also relaxed (as in (15)). I have proposed that the special feature of motherese is the underspecification of discourse-related features associated with R-expressions. This permits binding between a discourse participant and 1st/2nd person pronoun giving rise to crossover effects (cf. 5), an option not available in NCD registers.

4. Concluding remarks

Two longstanding concerns in studies of motherese have been to determine (i) how it differs from NCD adult language, and (ii) the extent to which this special register simplifies the input to the child. The data considered in this paper suggest that adults make liberal use of R-expressions to refer to speaker/hearer when addressing young children, an option also available in adult-directed language. In both cases, violations of the Prohibition P (non-redundancy) are permitted when

they serve specific communicative ends, for example, to highlight the identity or role of the speaker (as mother, caretaker, or some other person of interest or relevance), or to clarify the reference of pronouns. Only in motherese is the latter function available for 1st and 2nd person pronouns because of the hypothesized underspecification of speaker/hearer features in R-expressions that denote discourse participants in that register.

A final point concerns the question of whether motherese is indeed a simplified language and therefore able to facilitate language development and/or communication. Intuitively, a proper name is referentially more transparent than a pronoun and thus MD may enhance communication for that reason. On the other hand, the data in (5), (7a,b) and (10), which illustrate the interaction of pronouns and R-expressions in MD, do not provide a simple and straightforward grammar-learning lesson. On the contrary, as Durkin et al. (1982) point out, "the major piece of evidence against a linguistic instruction account is simply that the instruction is wrong" (p. 112). This is because "[t]he input data do not consistently demonstrate the adult model that the child has ultimately to acquire" (p. 116). [10] Durkin et al. are right, but only if the child is relying solely on the input. If, on the other hand, the child is endowed with universal principles of grammar, including the binding principles and the knowledge that 1st and 2nd person pronouns are variables bound to discourse operators, the coreference relations illustrated in these data will not be misleading. This leads us to the rather paradoxical conclusion that motherese may indeed facilitate acquisition or at least communication of certain referential properties of language, but only under the assumption that the input is filtered through a rich system of innate grammatical knowledge.

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Endnotes

1 As would be expected, MD is also a feature of child language: children often use their own names in place of 1st person pronouns and *mommy* or *daddy* or other names when address-

ing adults, as in (i) (from Radford 1990).

(i) Daddy want golf ball (spoken by child).

(ii) Hayley (= a child) draw boat.

The evidence suggests that children use MD following adult models and not vice versa. First, children use MD to a lesser or greater degree depending on frequency in parental usage (Kiebzak-Mandera 2006), and second, adults use MD even before children are speaking (Durkin et al. 1982).

2 German examples are provided by J. Berger-Morales (p.c.), Japanese by K. Neilson (p.c.), Farsi by S. Shademan (p.c.), Italian by I. Caponigro (p.c.) and Dutch in van der Geest (1977) and Portuguese by Ana Lucia Santos (p.c.).

3 The facts in (5)–(7) also hold in motherese in German (J. Berger-Morales, p.c.), Italian (A. Giorgi, p.c.), and Farsi (S. Shademan p.c.) with one difference. Examples corresponding to (5a) must involve alienable possession, as follows:

(i) Ich wasche Mamis Kleid. (German)
'I wash mommy's clothes.'

(ii) Bia bebin daaram daamane mamano utu mikonam. (Farsi)
'Come see I'm going to iron mommy's skirt.'

(iii) Vedi che lavo la gonna della mamma. (Italian)
'See, (I)'m washing mommy's skirt.'

4 Weak crossover configurations, as in (i), are much better than (8b), but not perfect.

(i) ??Sorry honey, mommy's boss says that I have to work late.

5 The example in (11a) is due to Wills (1977), who makes the point that "participant deixis" is not only a feature of motherese, but is also found in NCD adult registers in restricted cases.

6 Similarly, a proper name that denotes the addressee, e.g. the child's name, will be unspecified for the hearer feature, i.e. [– speaker, α hearer].

7 Elsewhere, I have argued (Hyams 1996) that root infinitives (e.g. *Eve sit floor*, Dutch *Papa schoen wassen* 'Daddy washes the shoes') and determiner drop (e.g. *Wayne in [the] garden*, Dutch *Papa heft ook trein* 'Daddy also has [the] train') are the result of an underspecification of tense and specificity features (cf. also Schaeffer 2000). The basic idea is that the children can anchor sentences into discourse deictically bypassing the functional category system required by adults. It seems likely the underspecification of speaker/hearer features in motherese (and in child language – cf. note 1) is a related phenomenon.

8 According to Schlenker (2005a), this same kind of non-redundancy is at the root of binding conditions B and C, which rule out repetition of coreferring expressions (*John saw him. *He saw John*). In the case of binding, both expressions are introduced linguistically while in the cases discussed in the text the speaker/hearer information is contextually introduced.

9 Schlenker (2005b) proposes a somewhat different account – a pragmatic principle *Minimize Restrictors!* – to explain the Prohibition P cases as well as Condition C effects and relaxations thereof, including epithets (e.g. *John ran over a man who was trying to give the idiot directions*). *Minimize Restrictors!* rules out a sentence just in case there is a 'more economical' competitor which achieves the same truth conditions. See Schlenker (2005b) for further discussion.

10 To be more specific, the child would be led to generalizations about coreference possibilities

that are sensitive to the specific form of the pronoun ($1^{st}/2^{nd}$ vs. 3^{rd}): (i) an R-expression must be free in the domain of a pronoun iff the pronoun is 3^{rd} person; (ii) a pronoun must be locally free in the domain of an R-expression iff the pronoun refers to the speaker or addressee.

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