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CHILDREN'S EXPOSURE TO IRONY IN THE FIRST FOUR YEARS OF THEIR LIFE: WHAT WE LEARN ABOUT THE USE OF IRONIC COMMENTS BY MOTHERS FROM THE ANALYSIS OF THE PROVIDENCE CORPUS OF CHILDES

There has been little research conducted on the use of figurative language in parents' input provided by caregivers in child-directed speech during the first four years of the child's life. The aim of the described study was to check (a) how often ironic comments are present in child-directed speech when the interaction takes place between a mother and a child aged 4 and below and (b) what types of ironic comments children of this age are exposed to. In order to answer these questions, ironic utterances were identified in the videos of 50 hours of recordings that included mother-child interactions of five children aged 2;10–3;05, available through the CHILDES – Providence Data (Demuth, Culbertson, & Alter, 2006; MacWhinney, 2007). The extracts were then assessed by competent judges to make sure the identified instances met the criteria for verbal irony (Dynel, 2014). Results suggest that irony is present in the mother's language used while interacting with her child, with a significant number of comments where the child seems not to be the actual addressee of the message, but rather the overhearer. The ironic utterances identified during the interactions included mostly references to the child's behavior or being overwhelmed. The most common ironic markers present in these utterances were rhetorical questions and hyperboles.

Key words: irony, child-directed speech, figurative language

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Introduction

Two factors are considered to play the key role in the process of language acquisition in children: firstly, it's the input, or broader: the linguistic environment of the child (Hurtado, Marchman, & Fernald, 2008; Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991; Ramirez-Esparza, García-Sierra, & Kuhl, 2014; Rowe, 2012) and secondly, the internal characteristics of the child, such as the child's system of representation (Gelman & Kalish, 2006; Mintz, Newport, & Bever, 2002; Newport, 1990; Pan, Rowe, Singer, & Snow, 2005). In the present article, the focus will be only on the former, as it appears to be an understudied aspect of possible source of figurative language comprehension.

Whereas there exists a significant body of research indicating the key role of adult-child interaction in language acquisition in terms of vocabulary, grammar, and phonology (e.g., Hoff, 2003; Huttenlocher et al., 1991; Pancosfar & Vernon-Feagans, 2006; Rowe, 2012), there is little research investigating the importance of the quantity and quality of figurative language input for the development of language and pragmatic skills early in life. This may partly stem from the fact that for decades researchers claimed that the production and comprehension of non-literal speech, such as metaphor or irony, is a skill that emerges very late in a child's development (Ackerman, 1983; Demorest, Meyer, Phelps, Gardner, & Winner, 1983) and that children are not able to comprehend figurative speech until they are between 6 and 10 years old (Pexman & Glenwright, 2007).

Recent studies have shown, however, that children can grasp the meaning of ironic comments as early as at the age of 4 (see e.g., Banasik, 2013, 2017; Milanowicz & Bokus, 2011; Recchia, Howe, Ross, & Alexander, 2010).

Investigating irony comprehension as a part of communicative skill is considered important because a large part of everyday conversation contains irony (Capelli, Nakagawa, & Madden, 1990; Gibbs, 2000; Mitosek, 2013). Some claim that irony is a way of thinking that has become *the ethos of our times* (Bokus & Kałowski, 2017), and because using irony can easily generate problems in the communication process, such as the lack of understanding of the statement by the recipients of the message (Pexman & Zvaigzne, 2004) or a negative affective reaction of the person to whom the statement is addressed, contrary to the intention of the speaker. Understanding of this form of figurative language may be hence be a meaningful skill. When parents use certain strategies (such as verbal irony, metaphors, idioms, or rhetorical questions) while talking to their children, the pragmatic and linguistic socialization of the child may be more successful (Becker, 1994).

So far, the only attempt to investigate irony use in parental interactions with young children was a study conducted by Recchia et al. (2010), who, after having tested families where the youngest children were 4 years old, confirmed that children at this age do understand figurative speech and that caregivers do

use irony towards them. The present study raises the question of the linguistic input considering figurative speech that children receive even earlier.

Attardo (2000) has pointed out that it is important to differentiate between ironic markers and irony itself. An *ironic marker* is an overt sign of the speaker's insincerity which can be indicative of irony, but is not necessary for classifying an utterance as ironic (Attardo, 2000; Haiman, 1998; Muecke, 1978). *Irony* must be defined in terms of intention and communication (Muecke, 1978).

Burgers, van Mulken, and Schellens (2012), on the basis of extensive literature review, have enumerated the following markers of irony: metaphor, hyperbole, understatement, rhetorical question (tropes as irony markers), ironic repetition, ironic echo, change of register (schematic irony markers), exclamation, taq question, focus optimalization, interjections, diminutives (morpho-syntactic irony markers), and typographic irony markers which will not be discussed in the paper since they refer to written text and the focus of this analysis paper is spoken interaction. The researchers did not include phonological cues of irony, such as intonation, nasalization, exaggerated stress, slowed rate of speaking, syllable lengthening, laughter, or flat intonation (Attardo, 2000), and although these are also considered important cues for recognizing irony (Zajączkowska, 2016), they will not be included in the analysis as they are beyond the scope of this paper.

The present study

The major purpose of this study was to examine a naturalistic language corpus of child-directed speech and verify if instances of ironic speech can be identified within it.

I was interested in exploring the content of any instance of irony in the input the children received from their immediate linguistic and social environment. Once the examples were recognized, a qualitative analysis of the data was performed, taking the approach of Qualitative Corpus Analysis (Hasko, 2012). Also, once identified, the instances of ironic statements were described in reference to the situation in which they were uttered in terms of the object of the comments and the subjective assessment of what the reason for using figurative language could have been. The presence of the irony markers were noted, as well as the possible real addressee of the ironic comment uttered.

Method and research questions

A corpus of mother-child interactions compiled and made available to researchers by Katherine Demuth et al. (2006) was used. The corpus comes from Child Data Exchange System (CHILDES), which is a collection of corpora established by Brian MacWhinney (2000) in order to facilitate access to language acquisition data and foster the sharing of research material.

The chosen corpus contains longitudinal video and audio recordings of six monolingual English-speaking children's language development from 2-3 years during spontaneous interactions with their parents (usually their mothers) at home. The participants included three boys (Alex, Ethan, and William) and three girls (Lily, Naima, Violet). Since Ethan was diagnosed with autism and only audio-recordings and no video recordings of his interactions with the parents are available, for the purpose of the study only the data for the five children were analyzed (Alex, William, Lily, Naima, and Violet).

Each child was recorded for 1 hour every 2 weeks beginning at the onset of first words. Two of the children have denser corpora, with weekly recordings from 1;3–2;10 (Naima) and 2;0–3;0 (Lily). The three girls (Lily, Naima, and Violet) were also recorded monthly from 3-4 years. The total corpus consists of 364 hours of speech.

I randomly chose 50 hours of recorder interactions, 10 hours from the dataset of each child, between the ages 2;10–3;05. The recordings together with the transcript were analyzed by identifying ironic comments in child-directed speech.

Clark and Gerrig's (1984) definition of *ironic utterance* was adopted, where *irony* is defined as a speech act (e.g., making an assertion or asking a question) which is not seriously being made, but rather which the speaker pretends to perform, including the mocking or contemptuous attitude that they expect the addressee to detect. This definition is an extension of the classical theory of irony, which identified irony in a message if the two meanings – surface and the intended one – were in opposition to one another, that is, when the real meaning was an inversion of the surface meaning (Anolli et al., 2002).

The identification of ironic utterances was a two-step process. First, each utterance, defined as in the CLAN Mannual (McWhinney, 2000), was coded for being ironic (1) vs. non-ironic (0). This was done by two independent coders. After the initial training, the inter-coder reliability was strong and amounted to $k = .88$ ($p = .000$). The fragments were then extracted from the recordings and given to four competent judges for evaluation to check if the identification of irony was performed correctly. The expressions were rated by them on a Likert scale from 1 to 5, where 1 meant *no ironic* at all and 5 meant *very ironic*. Only the instances, where all the judges chose the score 4 or higher, were adopted as ironic and used for further analysis.

After the identification of ironic utterances, analysis of the excerpts was performed by the author of this text. Two questions were planned to be tackled:

1. What does the ironic comment refer to?
2. What irony markers described in Burgers' et al. (2012) classification of ironic utterances can be seen in the mothers' comments?

Additionally, a third question emerged while analyzing the data. In several instances, it seemed that the ironic comment was not meant to be directed to

the child. Hence, I decided to try to additionally answer to the following one:

3. Who is the real addressee of the ironic message?

The second question refers to Burgers' et al. (2012) classification of irony markers described in the Introduction. Analyses concerning these questions were approached relatively naively, that is, no hypotheses were formed in advance and no attempt was made to link the findings to existing theories.

To answer the first question, thematic analysis was performed. That is, the identified excerpts were coded in terms of the theme appearing in the utterance with regard for the context. This was done following the process described by Braun and Clarke (2006). After familiarization with the data, initial coding was done in which labels (codes) identifying important features of the data relevant to the research question were given to the identified excerpts. In the next step, the codes and collated data were examined for broader patterns of meaning – that is, themes – which were later reviewed and refined. For instance, the ironic comment of a mom who said the following sentence to her 3-year old son, while she was preparing dinner for him and he was repeatedly making noises that apparently upset her:

William would you like to do something while you're waiting for your pancakes, other than make all these lovely sounds?

was first labeled as: reference to the child making sounds.

Another comment, given below, was labeled as reference to a child performing an undesired action and not following instructions. This was a conversation of a mom with an older sibling, in which she is referring to the younger sibling who had touched an object at home that she was not supposed to touch. The mom scolded the child for doing it and is now reminding the child's sibling not to touch it either, while he is in the process of doing so. The ironic comment: *yeah I know that's what she was doing too* is a reply to the sibling's defense *I was just looking*.

> MOT (mother): Why are you touching it ?
> MOT: Did anyone tell you to touch it ?
> (...)
> MOT: Did I just yell at your sister for doing that ?
> CHI (child): I was just looking.
> MOT: Yeah I know that's what she was doing too.

After collating the labels with other data and other labels, a broader category was generated in which both of the expressions were included: reference to the child's behavior. The categories (themes) that are described in the Results section were generated in the same way.

In order to answer question number two, each of the identified ironic comment was coded against the irony markers described by Burgers et al.

(2012). It was assumed that any of the comments can be described by none, one, or several of these markers.

Answering question number three was based on the author's and two independent judges' perception of whether the utterance was directed to the child or not. The third question was answered with the help of two competent judges, who were asked to binarily assess whether each of the individual comments were in fact addressed to the child or not. They received both the videos with audio and the transcripts and had to indicate if the child was the intended recipient of the message (marking 1) or not (marking 0). Cohen's k was run to determine the agreement between the coders for the recipient of the ironic message. There was substantial agreement between them ($k = .65$, $p = .000$).

Results

Out of the 50 hours of the video recordings of mother-child interaction from the Providence corpus, 34 comments were first identified as ironic, but only 22 of them were later unanimously assessed as such by the independent judges. These were later analyzed. In each of the family, there was at least one ironic comment said to the child during the 10 analyzed hours of interaction. The number of all and ironic utterances for each family is presented in Table 1.

Table 1. Number of All Mother's Utterances and Ironic Utterances in Each of the Family

	Average number of all mother's utterances per hour	Number of ironic utterances	Number of all utterances/10hours	% of ironic utterances
William	655.2	5	6552	0.08
Lilly	778.1	11	7781	0.14
Alex	744.5	1	7445	0.01
Naima	629.6	2	6296	0,03
Violet	555.9	1	5559	0.01

The thematic analysis showed that the instances of irony were related to five topics: the child's behavior, the partner's behavior (the behavior of the father of the child), busy time, the child's knowledge, and the speaker's own behavior. Ironic comments referring to the child's behavior included utterances about fussy eating such as *I see you're decorating the plate* or *I just had the usual presentation of six different meals to her highness*; the child's defiance, being not careful with some toys (*lets not quite be so destructive*) or the child's grumpiness (*let's sit here and be grumpy, you wanna?*). Ironic remarks on the partner's behavior were both spoken with and without the presence of the partner in the room, which sometimes gives the impression that the comment is directed to the child, especially when following a statement with discourse markers suggesting that the child is the recipient of the message.

The following conversation, which is interwoven with 2-year old Lily's game with dolls, is an example of this, the first statement being said by one of the doll characters in a pretend play:

> CHI: I don't want to go to my house.
> MOT: You don't want to go to your house?
> CHI: No.
> MOT: That's a shame.
> MOT: Maybe that's because you think the kitchen will never be done.
> MOT: Mommy thinks that too.

Ironic comments which were directed to the partner took place in the presence of the child. An instance of such comment is given below, within a conversation where the mother criticized the father for not putting food away to the fridge after eating.

> MOT: How come you didn't put that?
> MOT: Those beans and stuff away (be)cause every time you leave that stuff out it goes bad.
> FAT (father): Oh yeah, sorry about that.
> MOT: It's a waste.
> FAT: I know.
> MOT: Just (be)cause you don't like it…
> MOT: Doesn't mean…
> FAT: What?
> MOT: I don't like it.
> FAT: You don't like it?
> MOT: No just (be)cause you don't like it doesn't mean don't put it away.
> (...)
> *MOT: Well all bacteria gets on it if you don't put them in the fridge.
> *MOT: **That's why they have fridges, you know.**

Both instances where the ironic comment was given a theme of busy time, the mother was involved in multiple activities when the phone rang.

Ironic responses to the child's statements or behaviors were mostly reactions to what the child said during pretend play. The ironic comments were in these cases rather playful and stressed the silliness of what the child had said, for example, *That's a very youthful mommy doll* in response to the child's statement that a baby doll sitting at a potty is a "mommy doll". Ironic comments referred also to an lost item were either a resigned request for help: *If you can (...) give a hint of some sort of where your cup is, that would be helpful*, or an ostensibly overenthusiastic reaction to receiving from the child something else than the object that is being sought after: *Panda snowflake, just what I always wanted!*

One instance that was classified as a reference to the child's knowledge was the mother's reaction to the vocabulary knowledge of the 2 year old Lily presented in the interaction below:

*MOT: What's that?
*CHI: A Santa.
*MOT: A Santa.
*MOT: What's that?
*CHI: Yyy.
*MOT: **Good Jewish girl.**
*MOT: She knows Santa but she doesn't know a menorah.

The mother's ironic statements related her own behavior was when she commented on being recorded when she realized she had told the camera operator something she did not want her husband to know or when she did something that is in her perception socially not acceptable, such as giving the child breakfast consisting of sugary foods.

The analysis of irony markers showed that in mother's utterances, the following markers are present: metaphors, hyperboles, understatements, rhetorical questions, ironic repetitions, changes of register, exclamations, and interjections. Rhetorical questions and hyperboles were most common, appearing five times each.

Interestingly, several ironic utterances did not include any of the markers identified by Burgers et al. No ironic echo, tag question, focus optimization, or diminutives were present in the analyzed utterances. The interrater reliability score for the types of irony was substantial ($k = .65$, $p = .000$).

The third question was answered with the help of two competent judges, who were asked to binarily assess whether each of the individual comments were in fact addressed to the child or not. They received both the videos with audio and the transcripts and had to indicate if the child was the intended recipient of the message. Their agreement, tested with running Kappa's k in SPSS, proved to be moderate with $k = .57$ ($p = .000$).

From the 22 utterances, eight of them were unanimously assessed by the competent judges to have the child as the direct addressee. Two of them were classified as difficult to decide about whether they were directed to the child or not, whereas in 10 of them the child was said not to be the direct addressee of the ironic message, even if mother is talking to the child.

Discussion

The results indicated that ironic comments did occur during mother-child interaction, even if not frequently. They were directed to the child, to another person, or were merely spoken in the presence of the child (the child's father or grandmother, the camera operator/research assistant), directed to oneself, or, in a few cases, it was difficult to state who the actual addressee of the

ironic message is. Forty-five percent of the instances of irony were assessed as comments that were meant to be directed to the child. This is an interesting observation, especially since numerous researchers claiming that children generally fail to interpret irony even beyond the age of 9 years (Demorest et al., 1983; Filippova & Astington, 2008, 2010).

These results, although not representative or comprehensive, may also shed new light on the linguistic environment of the child in terms of figurative language that might be heard or overheard before the fourth birthday. They give rise to hypotheses about parents exposing their children to irony very early in their lives.

The answer to the first question about recurring themes showed that mothers' ironic comments often refer to the child's or the partner's behavior that the mother does not approve of. Uttering these comments in such cases might be seen as a criticism or as a way of coping in difficult situation. The interpretation of irony use as a method of coping with a difficult situation may be also applied for most of other themes discovered in the ironic utterances, that is for the situation where the speaker (mother) is looking for a lost item or when she realizes she had said or done something while being recorded that should not be shared. Other ironic utterances are related to a funny or silly statement made by the child during a pretend play. There, the mother, by echoing or turning into hyperbole what the child had said, stresses the humorous aspect of the situation.

The answer to the second question provided us with the information about the irony markers present in the mothers' ironic utterances. While it was not surprising that rhetoric questions and hyperboles were frequently present, since earlier literature found these particular types of figurative language particularly common in child-directed speech (Recchia et al., 2010), it is surprising that not many tokens of ironic markers could be identified.

An interesting observation is the fact that less than half of the ironic comments spoken by mothers during the interaction with the child were assessed as not assuming the child as the direct addressee of the comment. Even if the child was the only person present in the room and when the mother seemed to be talking to the child. It makes the child an *overhearer* of the ironic comments, which might be differently processed than ironic messages which are intentionally directed to the child, but which still introduce figurative expressions into the child's environment and as such should be noticed while describing the child's possible exposure to figurative speech.

Limitations and future directions

Even with 10 hours of observation for each family, ironic language rates were relatively low, and thus data on children's responses were often based on small frequencies. Yet, none of the mothers failed to produce an ironic remark.

This provides us with an interesting observation that children do hear ironic utterances, both the ones that are directed to them and these that are overheard, in a very young age, long before most of the studies show any competence of a child to understand an ironic remark.

Also, as with most qualitative approaches to corpus analysis, the findings cannot be in any way generalized or treated as representative, especially taken into consideration that the corpus consists of conversations that took place during just one hour every week or two weeks. In the future, an analysis of a more extensive record of the interactions over time is planned to capture possible changes in the ways mothers address their children.

An important limitation of this study is that it was based on an exclusively Caucasian Anglophone American sample and is not generalizable to other ethnic, cultural, or linguistic groups. It would be useful to determine whether family use of irony varies as a function of cultural differences in attitudes towards this linguistic device as well as differences in conversational indirectness (Holtgraves, 1997).

In the sample, there was a great deal of variability across families in their use of ironic language. If children's understanding of irony is fostered by their exposure to this language, then there should be predictable individual differences between families in children's understanding and parents' use of irony. This is an exciting direction for future studies. Also, it would be interesting to look into some variables that predict children's social-cognitive understanding in general, such as internal state language, engagement in pretense, and conflict strategies, since this may be also associated with individual differences in children's irony comprehension. Further studies should combine observational and laboratory assessments to examine how children's experiences in the family are associated with their performance in irony comprehension.

Acknowledgments

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