

ARTICLE

“Mom said it in quotation marks!” Irony comprehension and metapragmatic awareness in 8-year-olds

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Abstract

This study investigated links between the development of children’s understanding of ironic comments and their metapragmatic knowledge. Forty-six 8-year-olds completed the short version of the Irony Comprehension Task, during which they were presented with ironic comments in three stories and asked to provide reasons for why the speaker in a story uttered an ironic comment. We coded their responses and compared the results to similar data collected previously with 5-year-olds. Results showed that compared to younger children, 8-year-olds frequently refer to interlocutors’ emotions, intentions, and to metapragmatics. These results support the view that comprehension of verbal irony is an emerging skill in children.

Keywords: irony comprehension; verbal irony; pragmatic skills

Introduction

The ability to communicate effectively is an essential skill for social functioning, particularly during childhood (Morreale et al., 2000). Children are often evaluated by adults on the basis of their communicative competence, or their ability to express their thoughts and feelings with another person (McCroskey & Richmond, 1990). Middle childhood is most often defined as the period between ages 6 and 12, which is a time of many transition points (National Research Council, 1984). For example, during this age period, the beginning of “the age of reason” is marked (Rogoff et al., 1975). During middle childhood, at around 7–8 years of age, typically developing children begin to demonstrate what is known by psycholinguists as pragmatic proficiency (Del Giudice, 2014). Such an aptitude involves the use and understanding of nonliteral language, including verbal irony (Whalen et al., 2013). The occurrence of ironic elements in speech is a social and cultural phenomenon. Most individuals use irony to express their thoughts and emotions in everyday conversations (Capelli et al., 1990). Even though using irony entails a risk of

being misunderstood (Kim & Lantolf, 2018), it is used relatively often among adult speakers – approximately 8% of all utterances among friends are ironic (Gibbs, 2000). Although there is a significant body of knowledge on irony comprehension along development, to date, little is known about how particular types of irony are interpreted in middle childhood. Most studies focus on children’s first instances of irony production, and few explore their ability to interpret or “figure out” ironic messages (Whalen & Pexman, 2010). We were interested in going beyond testing whether children understand irony. Specifically, we attempted to see if eight-year-olds understand why irony might be used and how they make sense of ironic utterances. This study explores comprehension and interpretation of ironic utterances by eight-year-olds, with a special focus on their metapragmatic explanations, i.e., comments that explicitly refer to pragmatic rules and behaviors (Becker, 1988, as cited in Stude, 2007).

Defining irony

Verbal irony is often characterized as an elusive phenomenon and difficult to define (Kreuz, 2020). Generally, it is understood as a type of utterance in which there is a difference between the intended and the literal meaning (Garmendia, 2018; Grice, 1975) and where a disparaging evaluation of either the target of the utterance or some other element of the referenced situation is expressed (Dynel, 2014). In other words, irony usually conveys unfavorable messages, often criticism or expression of dissatisfaction, in an indirect way (although ironic compliments and ironic praise are also possible, see Attardo, 2000). For example, imagine you’ve been waiting impatiently for someone who arrives significantly late. Some possible ironic comments that you might say to them include: (1) *Thanks for coming on time!* (2) *Why the rush?* (3) *I’m glad you took your time.* (4) *Punctual as always!*

Each of the statements above is a form of irony, where the literal meaning would suggest 1) thanking the person who is late 2) asking the person why they were late 3) expressing a positive emotion related to the person’s behavior 4) praising the person for a repeating pattern of behavior. Of course, the intended meaning of an ironic statement may be to express one’s irritation through sarcasm by blaming or judging the addressee for doing something wrong. Such examples express in reality something slightly different from what the literal meaning would entail. The most prototypical form of the ironic statement in such a situation might be saying “You came so soon!” or “I did not have to wait for you at all!”, which would be an inversion of the intended meaning. Inversion has been proven to be the easiest form of irony to comprehend (Attardo, 2013). In our study, we used this conventional form of irony based on the inversion of the literal meaning.

Irony comprehension in developmental perspective

As children move from early to middle childhood and develop more complex social motivations (Carver *et al.*, 2003; Del Giudice, 2014), they learn to use language in more sophisticated ways for various social pragmatic goals. Irony comprehension is thought to be a major milestone in the development of children’s social cognition and social-communicative competence (Aguert *et al.*, 2018; Peterson *et al.*, 2012). It is a skill that develops quite late in a child’s development, as compared to other aspects of language such as semantics or syntax (e.g., Ackerman, 1983; Demorest *et al.*, 1983, 1984). Although much has already been discovered about the developmental aspects of irony

comprehension, not all aspects have been fully mapped. Many studies indicate that irony comprehension begins before the age of six, whereas some researchers claim that it emerges around the age of ten (Ackerman, 1983; Dews et al., 1996; Filippova & Astington, 2010; Harris & Pexman, 2003; Pexman & Glenwright, 2007; Sullivan et al., 1995). Earlier research suggested that even 13-year-old children were not always able to understand irony, and they were unable to distinguish it from cheating (Demorest et al., 1983, 1984). However, more recent studies show that this emerging skill can be observed much earlier: in 3- and 4-year-olds (Banasik-Jemiłniak & Bokus, 2019; Loukusa & Leinonen, 2008; Loukusa et al., 2007; Recchia et al., 2010). Pexman et al. indicated that basic comprehension is established by five to six, but a more demanding skill—appreciation of its pragmatic functions such as humor—continues to unfold across childhood (e.g., Pexman & Glenwright, 2007).

The ability to understand irony develops with the child's age (Bosco & Bucciarelli, 2008; Demorest et al., 1984; Dews et al., 1996; Dews & Winner, 1997; Filippova & Astington, 2008). Comprehension that a speaker is being ironic (or that the speaker means something other than what they are literally saying) precedes the comprehension of what the speaker intends by being ironic (sometimes referred to as irony appreciation).

For example, studies of Finnish children aged three to seven years found significant differences between older and younger children's explanations in response to a simple ironic statement (Loukusa et al., 2008) – older children showed higher levels of comprehension than younger children. Other studies show that children aged six, eight, and nine are better at dealing with a simple form of irony, i.e., statements that are the opposite of contextual information, than with complex ironic statements (Bosco & Bucciarelli, 2008). Irony comprehension could be divided into two main categories. The first is basic comprehension, when a child understands that a speaker is being nonliteral. The second refers to a more advanced appreciation, when a child understands the goal of speaking that way or is able to appreciate the function of this form. The level of irony comprehension in children is related not just to age, but to various mental competencies that tend to develop with age, such as cognitive flexibility and theory of mind. For instance, Zajączkowska and Abbot-Smith (2020) examined the children's understanding of both simple and complex irony and found that in younger children, aged six to eight, cognitive flexibility and theory of mind accounted for unique variance in their interpretation of simple irony. In contrast, for older children, aged ten to twelve, cognitive flexibility predicted irony comprehension, but theory of mind did not. This also shows the complexity of the phenomenon of irony comprehension and of the trajectory: with age, one predictor can become insignificant, whereas another one only gains significance at a certain age.

Metapragmatic development

Irony comprehension is linked to metapragmatic abilities (Szűcs & Babarczy, 2017), also known as the ability to explicitly reflect on pragmatic rules (Collins et al., 2014). According to Gombert (1992: 186), there are four phases of metalinguistic development. In the first phase, there is no reflection on the language itself. In the second stage, which takes place during the preschool years, epilingual (or epilinguistic) control appears. The term epilingual refers to a behavior which is comparable to metalinguistic, but unlike metalanguage, which might be realized with a decontextualized task, is usually situated in a rich communicative context. Epilinguistic abilities are described as more subconscious than metalinguistic abilities.

The development of the third stage begins when the child is around five to six years old. Reflection on linguistic processes may occur in several ways, including plays on words (rhymes) and interest in knowing how words are written and why things are described one way and not another. The fourth stage, called process automation, allows the individual to face, reflect on, and monitor the actions that must be carried out to solve some linguistic problems, such as separating words from the communicative context to analyze and reflect on their meaning. The latter two stages are relevant to irony comprehension.

Metalinguistic ability, therefore, is directly related to the ability to analyze the words themselves, making it essential for the correct interpretation of non-literal language, and specifically, verbal irony, where the literal meaning of the words emitted does not coincide with that of the communicative intention of the speaker. To distinguish between epilinguistic and metalinguistic abilities, the following example could be used: during a shared picture book reading, a caregiver says, “Look, this shelf is so high.” The child, noticing that “high” sounds like “hi,” begins playing with the two words. “Hi, shelf!” This epilinguistic ability occurs within the context, in the here and now. The child, prompted by the caregiver pointing out the high shelf, connects “hi” (as in “hello”) with “high” (as in “tall”). A separate example illustrates metalinguistic ability: unprompted, a child says, in conversation, “There are some words that sound the same, but they mean different things, like “hi” and “high”!

Laval (2003) found that some metapragmatic knowledge is apparent as early as the age of six years and is related first to the contextual features of the communicative situation (such as an illustration accompanying a sentence that may be interpreted either literally or non-literally). Metapragmatic knowledge of linguistic conventions (i.e., the link between the literal meaning and the idiomatic meaning) usually emerges at the age of nine. In our study, we looked at children at the age of eight. According to Laval’s findings, these children do not yet exhibit metapragmatic knowledge of linguistic conventions. Our goal was to examine whether children produce metapragmatic references when presented with an ironic utterance followed by an open-ended question.

Additionally, we explored if girls and boys differed from each other in this aspect. Our motivation was twofold. Firstly, past research shows parents use more emotion and social, moral words with girls compared to boys (Bosacki *et al.*, 2012; Maccoby, 1998). Secondly, there are only a few studies on gender differences in middle childhood in metapragmatics and irony comprehension (Berglund *et al.*, 2005; Huttenlocher *et al.*, 1991; Pinar *et al.*, 2020; Recchia *et al.*, 2010; Rothermich *et al.*, *in press*; Tomasi & Volkow, 2012) and while some of them indicate the differences in fact are noted, others show similar performance by girls and boys (Gabbatore *et al.*, 2021). Research shows that adult men use irony more frequently than women (e.g., Milanowicz & Bokus, 2020), but to our best knowledge, no research has found differences in irony comprehension between girls and boys in middle childhood.

The present study

The purpose of this study is to examine school-aged children’s irony appreciation through the evaluation of instances of metapragmatic references related to ironic expressions. The present study builds on past research that shows that the eight-year-olds generally score high in irony comprehension, although there is some variability in how proficient they are (Banasik-Jemielniak *et al.*, 2020) and expands it by focusing on how children justify the

use of ironic expressions rather than just checking if they know what the speaker meant. For developmental context, we then compared eight-year-olds' replies with answers provided by five-year-olds. Specifically, we addressed the following research questions:

1. In what ways do eight-year-old children explain irony use?
2. Do eight-year-old children refer to metapragmatics in their justifications of verbal irony usage? If so, how?
3. Does age affect how children use and explain irony? More specifically, is there a difference between eight-year-olds' and five-year-olds' metapragmatic reference when explaining irony use?
4. Do children's metapragmatic justifications differ according to gender?
5. Do relations exist between accuracy in the Irony Comprehension Task – short version (ICT-sv) and the frequency of metapragmatic references made by a child?

Questions 1, 2 and 4 were exploratory with no specific hypotheses. As to questions 3 and 5, based on previous results, we expected that:

- a) There would be a difference between the two age groups in the metapragmatic justifications of verbal irony use, with older children making such explanations often but the younger ones only making them occasionally.
- b) There would be a positive relation between accuracy in the ICT and the frequency of metapragmatic references made by a child.

Method

The study was part of a larger project (see Banasik-Jemielniak et al., 2020), where children and their parents, respectively, were tested on irony comprehension (children) and use (parents), and humor styles. The sample included 46 families from a large city in Poland, where there was at least one eight-year-old child. Inclusion criteria for families were the presence of one eight-year-old child. The sample was homogenous in terms of SES, race and ethnicity: it included middle-class, Caucasian parents of Polish background. The majority of the parents had completed higher education (university degree). Before starting the research, ethical clearance was received from the participating university (Faculty of Psychology, University of Warsaw, 2017). Written informed consent by parents of all participating children was obtained. The final sample included 24 girls, 22 boys, 46 mothers, and 41 fathers. Children's mean age was eight years; five months ($SD = 3.9$). All children attended state schools and were in second grade at the time of testing. All children were monolingual speakers of Polish who had not been diagnosed with any atypicalities in language or cognitive development. The families were recruited through social media and snowballing. We also randomly chose responses to matching questions of 45 five-year-old children, whose data was gleaned from a larger project (Banasik-Jemielniak et al., 2020). Older children were tested in their homes, and younger children were tested on the preschool premises after having been previously introduced to the researcher.

Materials

The ICT-sv was created by shortening the Irony Comprehension Task (ICT) (Banasik, 2013). The short version showed a satisfactory external validity (Banasik-Jemielniak &

Bokus, 2022). The shortened task is composed of three stories describing situations in which one of the characters makes an ironic comment to a child. The verbal irony in the characters' comments is based on the inversion of meaning, i.e., they say: "We are so lucky today" when everything goes wrong or "My favorite food" when the most hated food is served. Such use of verbal irony is often referred to as conventional (Alba-Juez, 2014). The stories are read to the child by the researcher while showing pictures on a computer screen. After each story, the child is asked questions about the ironic comment: an open question "Why do you think X said Y?", and a comprehension (closed-ended) question which was counted as a score of irony comprehension: "When X said Y, did they mean Y or Z?" of every character who is a speaker. An example of a closed-ended question is after the character of the story said: 'We are so lucky today!' (please see appendix 1, story 2) the question directed to the child was: "When mommy said 'We're so lucky today!', did she mean that they were lucky and everything went well or did she mean that they were not lucky and nothing went well?"

The participants were then asked two questions to assess how funny the ironic comment was (1) and how nice/mean the character uttering it was (2). For the quantitative score of simple comprehension, the first question (closed question) was scored for each of the presented stories, meaning that a total score of 3 could be obtained. The stories used can be found in appendix 1. Data from five-year-old children were gleaned from a larger study, in which they responded to 12 questions of the unshortened task. For the purpose of the analysis, we only included responses to the questions matching those used in the short task.

Coding scheme

The responses to the open-ended questions were analyzed within the content analysis framework, which involves classifying the responses into categories distinguished on the basis of patterns of meaning (Hsieh & Shannon, 2005). The categories were created following Pike's emic approach to language analysis (1967), according to which criteria are selected from an emergent perspective. Our findings emerged from the data and were not made a priori or before the study. Based on the data gathered, seven categories of children's responses were distinguished, which are presented in Table 1.

A comment was categorized into a rephrasing statement (1) when the child repeated part of the story. This response does not allow us to infer either comprehension of the intended meaning of the speaker by the child or the lack of the comprehension. The literal statement label (2) was given to the responses in which the child referred to the character's utterance as if it was intended literally, in a non-figurative way. Giving a response that falls into this category may indicate a lack of comprehension of the intended meaning of the speaker.

When children referred to the inversion of the literal meaning, which in the given task is equated with referring to the intended meaning, it was categorized as a reference to the intended meaning (3), and when they mentioned emotions, such as "She is really angry the bus went away," it was categorized as a reference to emotions (4). Both (3) and (4) may be indicators of emerging irony comprehension since they manifest the recognition of an additional meaning behind the literal one. When the child talked about language conventions, but without the use of the term "irony" or "sarcasm", we categorized the response as a metalinguistic reference without label (5). When they used the label "irony" or "sarcasm", we classified the reply as a metalinguistic reference with label (6). If the child

Table 1. Coding scheme for children's responses to open-ended question

Categories/Code	Definition	Example from Story #2
Category 1 Rephrasing Statement	Child repeated part of the story	"They wanted to go to the bus. But the door closed and the bus went away."
Category 2 Literal Justification	Child took the ironic statement literally, in a non-figurative way	"They were lucky because this way they could walk and burn more calories."
Category 3 Reference to Intended Meaning	Child referred to the inversion of the literal meaning/to what the speaker meant (without mentioning that it was a convention of language)	"They are not lucky."
Category 4 Reference to Emotions	Child referred to what the character uttering the ironic statement truly felt	"She is really angry that the bus went away."
Category 5 Metapragmatic Reference without Label	Child explained that the ironic statement was figurative language without explicitly using the labels "irony" or "sarcasm"	"This is what you say sometimes to mean the opposite."
Category 6 Metapragmatic Reference with Label	Child explicitly used the labels "irony" or "sarcasm"	"That was irony."
Category 7 No Response/Other	Child did not respond, said they did not know, or the response did not fit into one of the above categories.	"I don't know."

did not respond, said "I don't know" or gave another answer that could not be classified within the 6 above, we marked it as "no response/other" (7).

While categories 3–6 can be treated as a scale where a higher number refers to a higher emergent level of irony comprehension, category 2 indicates no irony comprehension and categories 1 and 7 entail no obvious interpretation.

Once the categories were created, two authors independently coded 20% of the children's responses. Next, Cohen's kappa was run to determine if there was agreement between the coders. There was a strong agreement $k = .89$, $p < .005$. Any disagreements were resolved by discussion. The remaining data were coded by the first author.

Results

Our aim was to investigate how children explain irony use, and more specifically, to what extent they use metapragmatic references. This would provide us with a window into understanding children's appreciation of irony. To answer our first research question, we present the results of our qualitative coding described above. The responses of eight-year-olds, presented in figure 1, show that children frequently referred to emotions when asked about the explanation of the character's utterance. They also rephrased the story, mentioned the intended meaning, and (less often) the literal meaning. Our second research question regarded the use of metapragmatic language when explaining the use of verbal irony. Seventeen out of 46 (37%) of the eight-year-old children used a metapragmatic explanation at least once, and three of them did it thrice. Only six 8-year-old

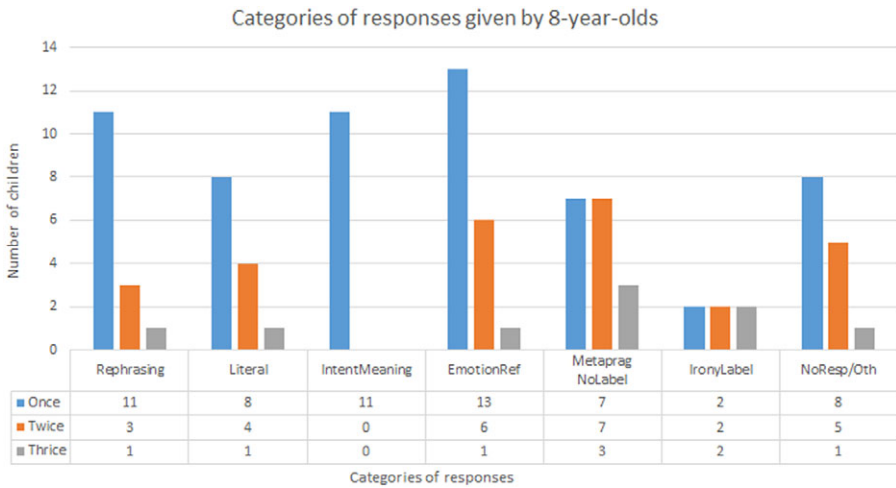


Figure 1. Categories of responses given by eight-year-olds

Table 2. Categories of responses given by eight-year-olds after the exclusion of failed accuracy questions.

	Rephrasing	Literal	Intended Meaning Reference	Emotional Reference	Metapragmatic No Label	Irony with Label	No Response/ Other
once	9 (11)	7 (8)	11	14 (13)	7	2	8
twice	3	3 (4)	0	7 (6)	7	2	5
thrice	1	1	0	1	3	2	1

If the numbers differ in comparison to the data prior to the exclusion, we added the previous result in brackets.

children (three girls and three boys), however, used the labels irony and sarcasm, while only two of them did it for all three of the stories (Figure 1). In the next step, we excluded from the analysis the responses to open-ended questions which were followed by the failed accuracy questions for a given story. This is presented in Table 1. For this reason, 11 responses were eliminated. Since the shift in the categories might not be obvious, we will illustrate how excluding the responses affected the numbers in a few examples. A child who did not respond correctly to the closed question after story #1 gave a literal explanation to the open-ended question. In the remaining two stories, this child referred to the open-ended question with a response that was categorized as “irony no label” and “emotional reference”, meaning that in the previous data representation marked the child who used “literal” reference once. By removing this response, the number in the “literal: once” decreased from 8 to 7. Another child, whose response was removed, answered with a statement that was categorized as “emotional reference”. This child had three responses marked as “emotional reference”, so deleting this response changed the cell “emotional reference: thrice” by decreasing it and “emotional reference: twice” by increasing it.

Children who failed the comprehension question usually answered with a literal interpretation or an emotional reference (see Table 2).

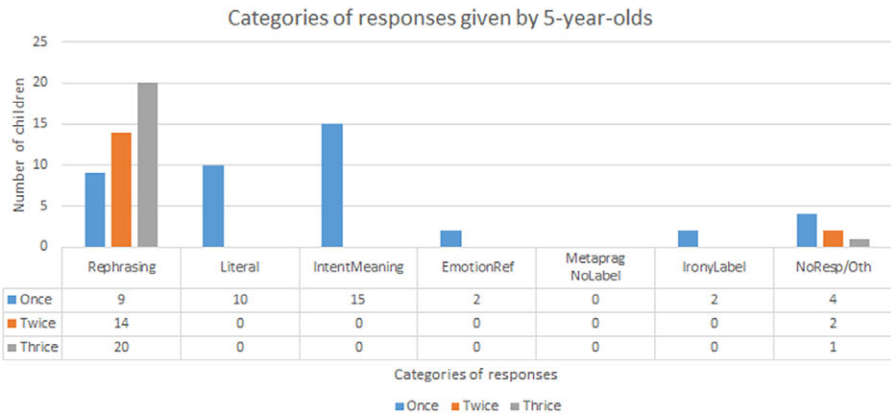


Figure 2. Categories of responses given by five-year-olds

To provide developmental context, we were also interested in comparing eight-year-olds with five-year-olds when it comes to the number of metapragmatic references that they made. We tested five-year-olds from the same population on the ICT for a different study (Banasik-Jemielniak et al., 2020), and analyzed their responses for the purposes of comparison here. The categories produced by five-year-olds are presented in figure 2. Specifically, we found that both 5- and 8-year-olds scored relatively high in accuracy on the ICT, demonstrating comprehension of the intended meaning of the character's ironic utterance. The younger children were well above chance, while the older children were at ceiling.

Rephrasing was the most frequent response given by the younger children, followed by reference to intended meaning and then to literal meaning.

To test for age differences in explanation type, we ran Chi-square tests using SPSS 25.0 software. We found that the number of metapragmatic explanations produced is associated with age $X^2(1, N = 93) = 26.91, p = .000$. Five-year-olds did not provide any elaborate explanations for irony use, whereas eight-year-olds referred to interlocutors' emotions, intentions, and to metapragmatics.

To test whether gender differences exist among eight-year-olds, we first used a t-test to compare 22 boys ($M = .59, SD = .959$) and 24 girls ($M = .63, SD = .970$) on the number of metapragmatic explanations they used. We found no significant difference: ($t = -.12, p = .91$). Second, we checked the use of the label "irony" or "sarcasm" in particular (boys: $M = .318, SD = .89$, girls: $M = .21, SD = .59$; $t = .49, p = .62$). Again, we found no significant difference.

Qualitative analysis of children's responses showed that for both age groups, children who responded incorrectly to the comprehension question (which followed the open-ended question), gave an explanation that was categorized as either literal or reference to emotions.

Finally, we explored whether there is a relation between accuracy on the ICT-sv and the number of metapragmatic references. Correlational results found no significant effect: $r(44) = .112, p = .469$. However, since the values for irony comprehension ranged only from 0 to 3, and there was little variability, we decided to check if there is a difference between children who are proficient irony comprehenders vs. non-proficient ironic comprehenders, following the rationale used by Banasik-Jemielniak et al. (2020). The

decision to recode the results this way was made based on the structure of the data: there was a low range of the scores obtained by the children when considering the score 0-3, which made it difficult to treat the variable as a continuous one. We recoded the variable into a binary score, where children who scored 3 were classified as proficient irony comprehenders, and those who scored below 3 were classified as non-proficient irony comprehenders. Based on the scores, eight-year-old children are either able to comprehend very simple irony or at times might misinterpret a statement or two, but we cannot treat this variable as a linear one.

Using these two categories, we compared the two groups on the use of metapragmatic references. The difference was not statistically significant; one could spot a trend ($t = -1.93$, $p = .06$) towards higher number of metapragmatic references in the group of proficient irony comprehenders: ($N = 34$, $M = 1.05$, $SD = 1.15$), and non-proficient irony comprehenders: ($N=12$ $M=.538$ $SD=.66$).

Ratings of funniness and niceness

Since the perception of an ironic utterance through communicative intention is relevant for exploring the developing comprehension of this phenomenon, we decided to additionally check whether the rating of the ironic utterances present in the stories are related to the accuracy in the comprehension question. To do this, we quantified the choices made by children on a Likert-like 3-point scale using smiley faces. This scale was used for two questions: "When X said Y, was it funny?" (0-not funny at all, 1-a little funny, 2-very funny) and "When X said Y, was s/he being nice?" (0-not nice at all, 1-a little nice, 2-very nice). Whereas we found no relation between the accuracy score and either the funny ($r = .059$ $p = .698$) or nice ratings ($r = -.232$ $p = .122$), we found that the answers on the funny and nice scale are correlated ($r = .591$ $p < .001$). This might indicate a possibility that children tend to use individual response strategies such as, for instance, always choosing the first option or always choosing the last option. This possibility might be verified in the future through, as an example, random ordering of the elements on the scale. Alternatively, it is possible that the valence for both nice and funny ratings may be perceived as positive. Even though the constructs are different, the perceived positivity might be the dominant feature of them, and hence choices in both questions are related. Additionally, the visuals used in the Irony Comprehension Task are similar and both depict positive vs. neutral/less positive faces, which may bias children in attending to the positive valence of each construct being similar. The rating scales can be modified in the future.

We also checked if children differ when split into perfect irony comprehenders and not perfect irony comprehenders in terms of their mean number of responses that were categorized as literal responses ($t=2.00$, $p = .051$), references to intended meaning ($t = -.77$, $p = .44$), references to emotions ($t = -.188$, $p = .85$), and no response/other ($t = -1.2$, $p = .23$). The t-test showed no significant result between the two groups in any of the categories. Again, this may be due to a small sample size.

Power analysis

Using G*Power (Faul *et al.*, 2009) a sensitivity analysis was conducted to determine that our sample of 46 with an alpha level of 0.05 and a medium effect size of 0.3 would achieve power for the study 0.67, which is not satisfactory. This is one of the shortcomings of the quantitative part of our study.

Discussion

This study aimed to understand how children interpret ironic utterances. We investigated how eight-year-olds explain irony use (to what extent they understand the “why” of irony, not only the “what” of irony), and more specifically, to what extent they use metapragmatic references to describe it.

Given that past research shows that the majority of the eight-year-olds are successful in the ICT (Banasik-Jemielniak et al., 2020), the present study explored not only the accuracy in the recognition of the intended meaning in an ironic statement but also the children’s explanations of why this particular expression was used. Findings showed differences in how children interpret comments in which the speaker says the opposite of what s/he is saying. Each of the main findings will be discussed below, followed by implications, limitations, and future directions.

We found that eight-year-olds often refer to emotions when explaining irony use. We also found that eight-year-olds are more likely than five-year-olds to recognize the intended meaning in simple ironic statements, which shows that children do not have to know a label to be aware of a phenomenon. Finally, our sample of eight-year-olds showed no gender differences in metapragmatic explanations. The comparison of the two age groups provided us with the expected confirmation that irony comprehension develops dynamically with age, and so does the metapragmatic ability related to ironic utterances.

Compared to five-year-old children, results showed that eight-year-old children were more likely to recognize that interpretations of ironic comments are non-literal. This result supports past research that shows if an ironic task is simple in terms of lexical items and morphosyntax – the rules that determine the relation between linguistic forms, related to both the construction of words (morphology) and to the way that words and morphemes are combined to form phrases and sentences (syntax) – and if it does not rely heavily on children’s memory, children pass the ICT-sv as early as at the age of four and are proficient (score ranging at 90%) at the age of eight (Banasik-Jemielniak & Bokus, 2019; Banasik-Jemielniak et al., 2020; Recchia et al., 2010).

The present findings build upon past studies that suggest that irony comprehension is a complex process. Once again, we confirmed the results of previous studies showing that performance in irony recognition increases with age.

Results showed that the comprehension of the intended meaning behind the ironic statement may represent the first step in this emerging skill. Hence, a task that only checks for accuracy – i.e., verify if a child understood that if a character said, for example, “We’re so lucky today!”, she really means “We are really unlucky today!” – should be considered a task for comprehension of intended meaning in an ironic statement. Thus, correct responses would represent a basic element of irony comprehension, but not equal to it. Understanding irony also refers to positioning the form of the statement within the connotative context. i.e., being able to realize that the fact that meaning was not expressed literally adds to the overall meaning of the utterance. This is where metapragmatics can indicate a more advanced level of irony comprehension.

For example, Collins et al. (2014) found that typically developing children from six years of age show relatively limited access to awareness of pragmatic acts and can generally identify pragmatic rules in simple interactions. Importantly, the present study extends and expands this work in that we investigated children’s metapragmatic awareness within the context of irony. More specifically, we found that eight-year-olds used metapragmatic references significantly more often than five-year-olds do, which was

expected. We also found that metapragmatic references using the label “irony” or “sarcasm” occurred relatively rarely.

This finding is particularly novel as it illustrates that to perceive and be aware of a label, a child does not need to know the explicit label for a phenomenon. For example, in the present study, children explained that “sometimes you say something like this if everything goes wrong”, or that “it is an expression of anger”, demonstrating their knowledge of metapragmatic rules. We cannot rule out the possibility that linguistic ability can be an underlying factor in the development of metapragmatic explication. However, we found that children referred to metapragmatics without using explicit labels or sophisticated vocabulary. While it is not surprising that receptive language skills precede expressive language when it comes to vocabulary, including complex emotions such as shame and pride (Bloom, 1974; Kingsford *et al.*, 2021), it is not so trivial for pragmatics and thus suggests the need for future research.

Further, no gender differences were found in metapragmatic explanations among eight-year-old children. This is consistent with studies on irony comprehension by 4-, 5-, and 6-year-old children, which show that girls and boys respond similarly in irony comprehension task (e.g., Banasik-Jemielniak & Bokus, 2019). Future research should continue to investigate how gender and gender orientations/identities may influence individuals’ motivations and use of irony as a social-communicative tool (e.g., use irony to socially connect with or withdraw from others) in everyday conversations in later childhood and into adolescence. Given the lack of studies on the relation of gender with irony and metapragmatics across time, more longitudinal research is needed to explore when gender differences emerge, as studies show gender differences in adults’ irony use and comprehension.

Contrary to our expectations, we found no relation between the correct recognition of the speaker’s meaning in an ironic comment and metapragmatic explication. This may be a result of generally high scores on the ICT, which indexed the speaker’s meaning. We think that if the examples of ironic comments had been more sophisticated and more difficult for children of this age to comprehend, we would find a relation between metapragmatic explications and comprehension of the speaker’s meaning in ironic comments. Future research is needed to expand on the topic. Finally, as we describe in the results section, one of the main limitations of our study is that it is underpowered. In other words, the lack of some differences might stem from not having a large enough sample size.

Conclusions

The study explored school children’s explanations of ironic comments and provides a novel and meaningful contribution to the extant research on development of metapragmatic awareness. Specifically, the present results show that in the case of verbal irony, such an awareness may be demonstrated without using explicit metapragmatic labels. This means that within the context of irony, to comprehend a speaker’s meaning, a child does not need to demonstrate it verbally. We build upon past studies on children’s irony comprehension and metapragmatic awareness by showing that figurative language is an emerging complex process in children that develops throughout childhood into adolescence. Most importantly, our study extends previous research by making an attempt to understand what happens in the gap between when children understand the intended meaning behind an ironic statement, and when the child identifies what pragmatic

intentions are related to it. We do this by using children's metapragmatic awareness as an insight into the development of fuller irony appreciation.

Despite these novel contributions, this study was limited in that it looked at a relatively homogenous sample. The SES of the children was relatively high: most of their parents had higher education, and they all lived in a large city in Poland, an industrialized country.

Implications and Future Directions

The systematic investigation of children's knowledge and use of irony and metapragmatics should be of interest to researchers in developmental psychology, as well as psycho-socio-linguistics. Understanding how children make sense of irony in everyday conversations will provide a foundation for developmental psycho-socio-linguists to determine how ironic conversations are represented in children's minds. The present findings also promote future studies to explore how psycho-socio-affective-linguistic models of conversations that include irony may influence children's interactions with their social partners (parents, peers, teachers) as well as their ability to self-monitor their language use and thinking patterns.

In addition to developmental researchers, psycho-social linguists who study social interactions, emotional development, and attachment would also benefit from understanding the developmental trajectory of children's thinking about, and motivations to use, irony as a socio-communicative tool. Such studies would also discover how children's understanding is similar to and different from adults' understanding of irony. Further, the exploration of everyday conversation between children and their parents, siblings, and friends has the potential to inspire future study of non-normative concepts and their potential psycho-educational outcomes. Beyond psycho-linguistics, the investigation of children's thinking about irony holds promise for social-cultural anthropologists interested in studying children's motivation to use, understanding of, and usage, of irony and emotions in everyday conversations within social contexts (family and schools) across different cultures.

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Competing interest. The authors declare none.

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Appendix 1

Stories presented to children within the shortened Irony Comprehension Task. The original Polish version was included as well as the English translation in brackets. Each of the stories was followed by an open-ended question, a double-choice accuracy question, and two questions when the child was to evaluate the funniness of the story and the niceness of the character.

Story 1

Krzyś chciał się napić soku. Poprosił brata o sok. Brat nalał soku do szklanki. Krzyś przewrócił szklankę i wylał sok na czysty obrus. Zrobiła się duża, mokra plama. „Świetnie się spałeś!” powiedział brat do Krzysia.

[Krzyś wanted to have some juice. He asked his brother for the juice. Krzyś’s brother poured him a glass of juice. Krzyś knocked down the glass and spilt the juice over the clean tablecloth. There was a big, wet stain on the tablecloth. ‘Well done!’, said Krzyś’s brother to Krzyś.]

Story 2

Krzyś wraca z mamą z przedszkola. Chcą szybko wrócić do domu. Zaczyna padać deszcz. Mama z Krzysiem biegną do autobusu. Ale drzwi autobusu się zamknęły. Autobus odjechał bez nich. „Dziś naprawdę mamy szczęście” – powiedziała mama.

[Krzyś is coming back from kindergarten with his mum. They want to get back home quickly. It starts raining. Krzyś and his mum are running to catch a bus. But the bus door has closed. The bus has left without them. ‘We are so lucky today!’, says Krzyś’s mum.]

Story 3

Gosia bardzo nie lubi szpinaku. W przedszkolu nigdy go nie zjada. Dziś na obiad jest szpinak. Gosia nie chce jeść szpinaku. Mówi do koleżanki: „O, moje ulubione jedzenie!”

[Gosia dislikes spinach very much. She never eats it at kindergarten. There is spinach for lunch today. Gosia does not want to eat spinach. She says to her friend, ‘Oh, my favorite food!’.]

Appendix 2

Pictures shown while presenting the stories

Introductory slide

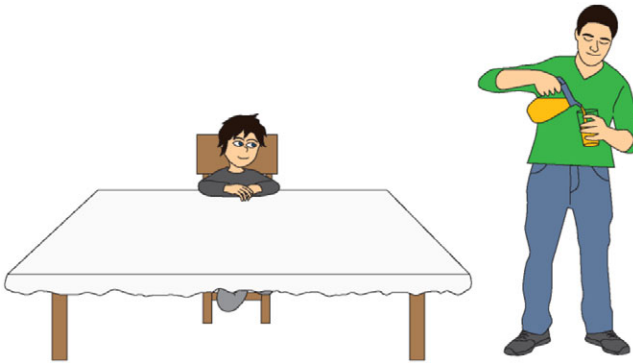


Figure 3. Story 1 Picture 1

Picture accompanying the story part: Krzyś wanted to have some juice. He asked his brother for the juice. Krzyś's brother poured him a glass of juice.

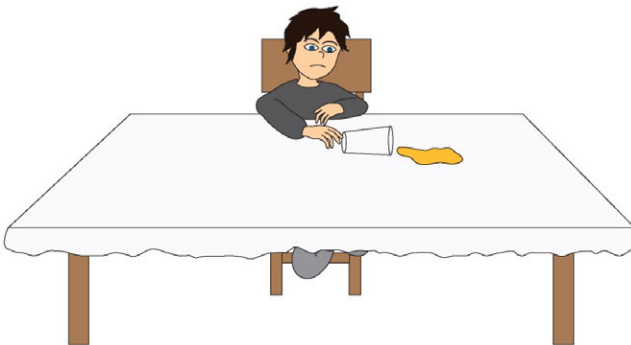


Figure 4. Story 1 Picture 2

Picture accompanying the story part: Krzyś knocked down the glass and spilled the juice over the clean tablecloth. There was a big, wet stain on the tablecloth.

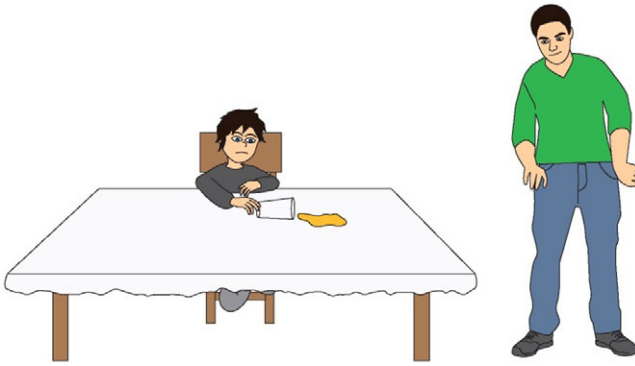


Figure 5. Story 1 Picture 3
Picture accompanying the story part: 'Well done!', said Krzys's brother to Krzys.



Figure 6. Story 1 Picture 4
Picture accompanying the open-ended question

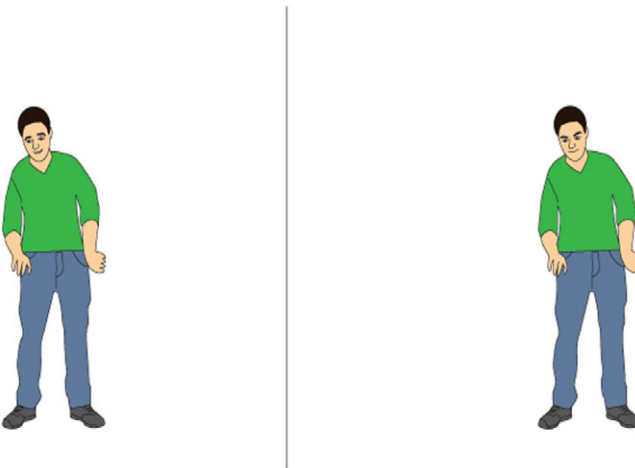


Figure 7. Story 1 Picture 5
Picture accompanying the accuracy question



Figure 8. Story 1 Picture 6
Picture accompanying the question about the 'funny' rating



Figure 9. Story 1 Picture 7
Picture accompanying the question about the 'nice' rating



Figure 10. Story 2 Picture 1
Picture accompanying the story part: Krzys is coming back from kindergarten with his mum. They want to get back home quickly.



Figure 11. Story 2 Picture 2

Picture accompanying the story part: It starts raining. Krzys and his mum are running to catch a bus. But the bus door has closed. The bus has left without them.



Figure 12. Story 2 Picture 3

Picture accompanying the story part: 'We are so lucky today!', says Krzys's mum.



Figure 13. Story 2 Picture 4
Picture accompanying the open-ended question



Figure 14. Story 2 Picture 5
Picture accompanying the accuracy question



Figure 15. Story 2 Picture 6
Picture accompanying the question about the 'funny' rating



Figure 16. Story 2 Picture 7
Picture accompanying the question about the 'nice' rating



Figure 17. Story 3 Picture 1
Picture accompanying the story part: Gosia dislikes spinach very much. She never eats it at kindergarten.



Figure 18. Story 3 Picture 2
Picture accompanying the story part: There is spinach for lunch today. Gosia does not want to eat spinach.



Figure 19. Story 3 Picture 3
Picture accompanying the story part: Gosia does not want to eat spinach. She says to her friend, 'Oh, my favorite food!'



Figure 20. Story 3 Picture 4
Picture accompanying the open-ended question



Figure 21. Story 3 Picture 5
Picture accompanying the accuracy question



Figure 22. Story 3 Picture 6
Picture accompanying the question about the 'funny' rating



Figure 23. Story 3 Picture 7
Picture accompanying the question about the 'nice' rating