ARTYKUŁY

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Illocutionary Competence in Irony Comprehension: Insights from Empirical Studies on ASD

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Abstract

In this paper, we offer a pragmatic analysis of utterances used in empirical studies on irony comprehension in individuals with Autism Spectrum Disorder (ASD). Specifically, we focus on three studies that examine the understanding of ironic compliments and criticisms. Our central argument is that interpreting these utterances

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requires substantial illocutionary competence, alongside mindreading abilities, both of which are essential for social cognition and interaction. After exploring how different types of compliments and criticisms are performed and comprehended, we argue that irony functions as an illocutionary negation, transforming the literal force of an utterance (it would have, if taken literally) into its opposite. Our key conclusion underscores the importance of interpreting empirical findings on irony comprehension through the lens of potential differences in illocutionary competence among participants and the ability to interpret the echoic and meta-illocutionary functions of irony.

In this paper, we present a pragmatic analysis of sample utterances used as experimental materials in empirical studies investigating the irony comprehension in children with Autism Spectrum Disorder (ASD). Specifically, we focus on three studies that examine the understanding of ironic compliments and ironic criticisms, conducted by Penny M. Pexman et al. (2011), Melanie Glenwright and Abiola S. Agbayewa (2012), and Francesca Panzeri et al. (2022). Our central conclusion is that interpreting the studied utterances requires a considerable amount of illocutionary competence, alongside mindreading abilities, to form a crucial aspect of our system for social cognition and interaction.

Illocutionary competence (Bachman, 1990) is the cognitive capacity to use language to convey and recognize forces such as informing, promising, requesting, apologizing, complimenting, and criticizing. In our view, it can be represented as a system of internalized procedures (Austin, 1975) or rules (Searle, 1969) for the felicitous performance of specific types of illocutionary acts. These procedures put lexical and syntactical constraints on how the acts are performed, require speakers to possess certain mental states and presuppositions, and impose specific requirements on the context of their performance.

Construed in this way, illocutionary competence forms a key component of pragmatic competence. Therefore, it is necessary for the proper understanding of ironic criticisms and compliments. Moreover, we argue that irony—described by Rachel Giora (1995) as a form of indirect negation—effectively serves as illocutionary negation as outlined by John R. Searle (1969). In other words, irony serves to reverse or negate the illocutionary force (or communicative intent) that an utterance would have if taken literally.

In Section 1, we discuss complimenting and criticizing as two types of illocutionary act. We examine the syntactic, lexical, and mental requirements for their felicitous performance, thereby identifying the key aspects of the competence underlying their production and comprehension. Section 2 presents a brief reconstruction of what we consider to be an adequate account of verbal irony, focusing on its echoic dimension and its indirect negation function. We argue that irony functions as an illocutionary negation, transforming the force of an utterance if taken literally into its opposite. Section 3 analyses sample utterances used in empirical studies on irony comprehension. We argue that their comprehension requires rudimentary illocutionary competence, as well as the ability to comprehend the echoic and meta-illocutionary functions of irony. Section 4 discusses the main results of our analysis.

Our key conclusion is that empirical findings on irony comprehension should be interpreted in light of potential differences in illocutionary competence among participants. This paper aims to lay the groundwork for such a discussion by analyzing the illocutionary dimension of sample ironic compliments and criticisms used in three existing studies.

1. Complimenting and criticizing as speech acts

In the sense outlined by John L. Austin, complimenting and criticizing are *behabitives* meaning that their performance is "connected with reactions to behavior and with behavior towards others and designed to exhibit attitudes and feelings" (Austin, 1975, p. 83). In short, each behabitive involves a more or less explicit reference to one's own or someone else's behavior and is designed to express the speaker's attitude towards it. As well as *compliment* and *criticize*, Austin considered the following performative verbs to name behabitives: *deplore*, *condole*, *congratulate*, *felicitate*, *thank*, *apologize*, and *welcome*.

John R. Searle (1979) classifies most Austinian behabitives as "expressives," meaning that their illocutionary point is "to express the psychological state specified in the sincerity condition about a state of affairs specified in the propositional content" (Searle, 1979, p. 11). He also argues that

expressives have no direction of fit because their propositional contents are presupposed rather than asserted. For example, when saying:

(*a*)   I thank you for *your efforts in completing the project tasks*.[1]

I presuppose that you put in some effort to complete the project tasks, and this presupposition is triggered by my use of the italicized possessive noun phrase. Each act of thanking expresses the speaker's gratitude or appreciation as its sincerity condition, and its illocutionary point is to express these attitudes in relation to the presupposed propositional content.

Searle's account of expressives is based on his analysis of their explicit performances, as in (*a*). However, complimenting and criticizing are rarely performed using the verbs *compliment* and *criticize*, respectively. Furthermore, explicit performative formulas for these acts do not adhere to the standard [I *F* NP] format, where *F* is an illocutionary verb. As Barbara Lewandowska-Tomaszczyk observes (1989, p. 99, note 5), neither English nor Polish data contain formulas such as *I compliment you* or *I praise you*. Instead, English speakers normally precede the verbs *praise* and *compliment*—as well as *blame* and *criticize*—with deontic modals such as *must* and *have to*, thereby signaling that the evaluations they exhibit are motivated by external factors, making them objective rather than subjective (Lewandowska-Tomaszczyk, 1989, p. 85).

To illustrate, consider the following utterances:

(*b*)   I must praise you for your performance in the test.
(*c*)   I have to compliment you on your informative speech.
(*d*)   I feel compelled to criticize you for your behavior at the conference.

The speaker in (*b*) *presupposes* that the addressee performed in a certain way in the test and *expresses* their positive attitude towards this performance. Furthermore, they communicate their evaluative judgment that the addressee performed well in a certain way. In our view, this judgment is conveyed through the mechanism of Sincerity-driven implicature, i.e., a pragmatic inference arising from the assumption that the speaker is

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[1]   We use lowercase letters to refer to constructed examples discussed in Sections 1 and 2, whereas sample ironic utterances used as experimental materials in empirical studies and analysed in Section 3 are referred to by digits.

observing the Maxim of Sincerity (Levinson, 1983, pp. 105–106). Generally, any speech act that admits sincerity gives rise to implicatures whose contents correspond to both the mode and the content of the state specified in the act's sincerity condition. For example, my assertion that P implicates both that I believe that P and that the proposition that P is justified, and my apology for doing B implicates both that I regret doing B and that my doing B is regrettable. By extension, my utterance of (*b*) conveys two Sincerity-driven implicatures: the proposition that I harbor a positive attitude towards your performance in the test, and the corresponding evaluative judgment that your performance is good in a particular way.

Similarly, the speaker of (*c*) *presupposes* that their addressee delivered an informative speech, *expresses* admiration for it, and *implicates* their evaluative judgment that the speech is good in a particular way and therefore praiseworthy. The speaker of (*d*) *presupposes* that the addressee behaved in a certain manner at the conference, *expresses* disapproval of this behavior, and *implicates* their evaluative judgment that this behavior is bad in a certain way and thus unacceptable.

Compliments (*b*) and (*c*), as well as criticism (*d*), can be analyzed adequately within the Searlean theory of expressives and the model of Sincerity-driven implicatures. The same holds for utterances (*e*) and (*f*), which constitute "partially descriptive" (Austin, 1975, p. 83) counterparts of the compliment (*c*) and criticism (*d*), respectively:

(*e*)   I like your speech.
(*f*)   I dislike your behavior at the conference.

However, the purely performative utterances (*c*) and (*d*) differ from their partially descriptive counterparts (*e*) and (*f*) in that the former present the implicated evaluative judgments as objectively valid, rather than subjectively valid, as the latter do.

Real, data-based studies (Lewandowska-Tomaszczyk, 1989; Komorowska & Ohrimovich, 2018) suggest that most compliments and criticisms take the form of what Austin (1975, pp. 32, 71) calls *implicit* or *primary performatives* (p. 69). To illustrate this, consider the following contextualized utterances and the constructions they exhibit. The lower index "EV" indicates that the indexed expression is evaluative.

(*g*)   Your speech was really informative.
        [NP is really ADJ$_{EV}$]
(*h*)   Alex is a genius.
        [NP is a NP$_{EV}$]
        context: Alex is the addressee's child.
(*i*)   You are a good speaker.
        [NP is a good/great NP]
(*j*)   You are a real speaker.
        [NP is a real NP$_{EV}$]
(*k*)   What an inspiring speech!
        [What a ADJ$_{EV}$ NP]
        context: The speaker refers to the addressee's speech.
(*l*)   What a great idea!
        [What a great NP]
(*m*)   Your behavior was really outrageous.
        [NP is really ADJ$_{EV}$]
(*n*)   You are a liar.
        [NP is a NP$_{EV}$]
(*o*)   You are a terrible speaker.
        [NP is a bad/terrible NP]
(*p*)   What a boring workshop!
        [What a ADJ$_{EV}$ NP]
        context: The addressee is the organizer of the workshop.

Folowing Lewandowska-Tomaszczyk (1989, p. 77), we consider the above constructions to be basic formulas for primarily performative evaluative acts. We assume that they encode a certain illocutionary potential (Witek, 2015; 2022a), i.e., a possible communicative function that a particular utterance can perform depending on the context or the speaker's intent. When adequately contextualized and modified by the content and character—that is, whether positive or negative—of the evaluative terms used, this potential can be further specified to yield the force of complimenting or criticizing. In other words, utterances from (*g*) to (*p*) constitute *direct* and *literal* acts of complimenting or criticizing; these forces lie within the illocutionary potential encoded by the constructions they exhibit.[2]

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[2]   We do not claim that the list of the constructions presented is exhaustive. However, we argue that it includes at least some basic formulas commonly used to perform direct

The force of a primarily performative utterance can be indicated by its syntactic, lexical, and contextual properties. Syntactic cues are reflected in the constructions identified above. However, they typically underdetermine the specific forces of utterances. To infer the speaker's illocutionary intent, we can rely on lexical and contextual information. Lexical cues consist of the use of evaluative expressions. For example, the adjectives *informative*, *inspiring*, *outrageous*, and *boring*, as well as the nouns *genius* and *liar*, are thick terms, meaning that the concepts they express "combine evaluation and non-evaluative description" (Väyrynen, 2021, p. 3). Phrases such as *a good speaker*, *a terrible speaker*, and *a great idea* express respect-relative evaluative concepts, meaning that they represent ways of being good or bad in certain non-evaluatively specified respects (p. 6). The noun *speaker* in the phrase *a real speaker* expresses a dual-character concept (pp. 6–7): its evaluative and purely descriptive dimensions, though related, are independent. This means that, in certain contexts, one can be activated without the other.

Contextual cues, such as those specified in (*h*), (*k*), and (*p*), enable us to narrow down the general force of praising to complimenting as well as the general force of criticizing to addressee-directed criticism. The felicity of an act of complimenting *requires*—that is, *presupposes* in the sense outlined by Austin (1975, p. 51)—that the addressee is somehow connected with the object, person, behavior or property being praised (Lewandowska-Tomaszczyk, 1989, p. 74). This contextual requirement constitutes the act's presuppositions in the Austinian sense, which should be distinguished from its presuppositions in the Stalnakerian sense. The former are typically specified in the act's preparatory conditions. For example, the felicity of my order *Close the window* presupposes, in the Austinian sense—presupposes$_A$, for short—that I am in a position of authority over my interlocutor and that the window is open. By contrast, Stalnakerian presuppositions of an utterance are the speaker's beliefs about the common ground (Stalnaker, 2002) and are associated with the use of certain lexical units or grammatical structures called *presupposition triggers* (Levinson, 1983). For example, when I say *Tom knows that Peter is a spy*, I presuppose$_S$—where the index "S" signals

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and literal evaluative acts. Specifically, we suggest that the force potential of exclamative constructions in (k), (l), and (p) also encompasses, in addition to the mirative function associated with expressing the speaker's attitude of surprise (Krawczak & Glynn, 2015), the force of complimenting (Komorowska & Ohrimovitch, 2018, p. 53).

the Stalnakerian reading of the verb—that Peter is a spy. This presupposition is triggered by the factive verb *know*.

A key difference between an explicitly performed compliment, e.g., utterance (*c*), and its primarily performative counterpart, e.g., utterance (*g*), is that what the former merely presupposes$_S$ is directly asserted by the latter. As Giovanna Alfonzetti (2013) claims, compliments—or, more specifically, what we refer to as *primarily performative compliments*—are hybrid speech acts, combining expressive and assertive aspects. Consequently, their sincerity requires the speaker to harbor not only a certain evaluative attitude, but also a corresponding evaluative judgment. Though different, these two requirements are closely related: the expressed attitude is directed at the situation that corresponds to the asserted content.

Consider again utterance (*a*), which presupposes$_S$ that the addressee put some effort into completing the project tasks and expresses the speaker's gratitude for this fact. Crucially, it gives rise to a Sincerity-driven implicature that the addressee's contribution to the project is good in a certain way and, hence, praiseworthy. Furthermore, its default perlocutionary goal is to please the addressee and make them feel better. In short, as Rod Bertolet (1994, p. 346) would put it, utterance (*a*) has *practical* effects that are characteristic of praising and complimenting. Given its impact on the interaction between the speaker and the addressee—considering both its Sincerity-driven implicature and its perlocutionary goal—utterance (*a*) can be regarded as a practical equivalent of an act of praise. Generally, utterances of the (*a*) form can be considered standardized indirect acts of praise, where "standardized" is used in the sense outlined by Kent Bach and Robert M. Harnish (1979): their use enables the addressees and other participants of the conversation to recognize these indirectly communicated forces "as immediately as if [...] literal [acts] were being performed" (Bach & Harnish, 1979, p. 174).

In addition to the clearly standardized indirect performances of compliments, there is a continuum of innovative indirect acts of complimenting, which require a considerable amount of pragmatic inference to understand. To illustrate, consider the following utterance:

(*r*)   I would never have thought of that!

When situated in a specific discursive context—e.g., when it follows a suggestion on how to solve a certain problem—it can convey the speaker's

positive evaluation of the addressee's recommendation, thereby functioning as an indirect act of complimenting (Lewandowska-Tomaszczyk, 1989, p. 84).

In this paper, we focus on direct and literal rather than indirect and nonliteral compliments and criticisms. Specifically, we concentrate on performative evaluative acts and their standardized indirect counterparts. Before proceeding to Section 2, we summarize the results of our analyses in Table 1. This table identifies the lexical and syntactical constraints on the literal performance of the acts under discussion (first column), as well as the mental states and presuppositions required for their felicity (second and third columns). In short, Table 1 represents the key aspects of the competence that enables us to produce and understand compliments and criticisms.

Table 1. Types of complimenting and criticizing

mode of performance	expressed state or attitude	propositional content of the expressed attitude
1	2	3
COMPLIMENTS		
explicitly performative [I must/have to/should compliment you on your NP]	S's **belief** that P	$P = A$ possesses property X P is presupposed$_s$ by "your NP"
	S's **evaluative judgment** that Q as objectively valid	$Q = $ Property X is good in a certain way Q is a Sincerity-driven implicature of S's act of complimenting
	S's **admiration** for A's having X	$R = (A$'s having) X is admirable
partially descriptive [I admire/like/love… your NP] [I admire you for your NP]	S's **belief** that P	$P = A$ possesses property X P is presupposed$_s$ by "your NP"
	S's **evaluative judgment** that Q	$Q = $ Property X is good in a certain way Q is a Sincerity-driven implicature of S's act of complimenting
	S's **admiration** for A's having X	$R = A$'s having, doing, or achieving X is admirable

1	2	3
primarily performative [NP is really ADJ$_{EV}$] [NP is a NP$_{EV}$] [NP is a real NP$_{EV}$] [NP is a good/great NP] [What a ADJ$_{EV}$ NP] [What a great NP]	S's **evaluative judgment** that Q	Q = Property X is good in a certain way Q is directly and literally asserted by S's utterance *qua* an assertive act
	S's **admiration** for X *or* S's **admiration** for A because of X	$R = X$ is admirable *or* $R = A$ is admirable because of X
	S's **belief** that T	$T = A$ is connected with X in a certain way, meaning that A possesses, did, or achieved X T is presupposed$_A$ by the felicity of S's act of complimenting
standardized indirect [Thanks for your NP]	S's **belief** that P	$P = A$ possesses property X P is presupposed$_s$ by "your NP"
	S's **evaluative judgment** that Q	Q = Property X is good in a certain way Q is a Sincerity-driven implicature of S's act of thanking
	S's **admiration** for X *or* S's **admiration** for A because of X	$R = X$ is admirable *or* $R = A$ is admirable because of X
CRITICISMS		
explicit performative [I need to/have to criticize you for your NP]	S's **belief** that P	$P = A$ possesses property X P is presupposed$_s$ by "your NP"
	S's **evaluative judgment** that Q as objectively valid	Q = Property X is bad in a certain way Q is a Sincerity-driven implicature of S's act of criticizing
	S's **disapproval of** and/or **disappointment in** A's having X	$R = (A$'s having$)$ X is objectionable and/or disappointing

1	2	3
not purely performative (partially descriptive) [I disapprove of/dislike/ hate … your NP] [I am disappointed with you because of your NP]	S's **belief** that P	$P = A$ possesses property X P is presupposed$_S$ by "your NP"
	S's **evaluative judgment** that Q	Q = Property X is bad in a certain way Q is a Sincerity-driven implicature of S's act of criticizing
	S's **disapproval of** and/or **disappointment in** A's having X	$R = A$'s having, doing, or achieving X is admirable
Direct primitive performative [NP is really ADJ$_{EV}$] [NP is a NP$_{EV}$] [NP is a real NP$_{EV}$] [NP is a bad/terrible NP] [What a ADJ$_{EV}$ NP] [What a great NP]	S's **evaluative judgment** that Q	Q is directly and literally asserted by S's utterance *qua* an assertive act
	S's **disapproval of** and/or **disappointment in** X *or* S's **disapproval of** and/or **disappointment in** A because of X	$R = X$ is objectionable and/or disappointing *or* $R = A$ is objectionable and/or disappointing because of X
	S's **belief** that T	$T = A$ is connected with X in a certain way, meaning that A possesses, did, or is responsible for X Proposition T is presupposed$_A$ by the felicity of S's act of criticizing

2. Two functions of irony

Over the past five decades, the phenomenon of verbal irony has become the subject of extensive study. Various theoretical approaches to ironic utterances, their specific communicative functions, and their underlying mechanisms have been developed by linguists, philosophers, psychologists, and cognitive scientists (Grice, 1975/1989; Searle, 1979; Amante, 1981; Sperber, 1984; Clark & Gerrig, 1984; Giora, 1995; Attardo, 2000; Wilson, 2013; Wilson & Sperber, 2012; Pexman et al., 2011; Glenwright et al., 2012;

Green, 2017; Panzeri et al., 2022; Witek, 2022b). Our aim is not to discuss the dominant trends in theoretical and experimental studies on irony (see Garmendia, 2018 and Fuchs, 2023 for an overview). Instead, we focus on two complementary perspectives on irony: the echoic theory developed by Dan Sperber and Deirdre Wilson (2012) and Rachel Giora's model of irony as indirect negation (Giora, 1995). We generally think of irony as a discursive technique that serves two functions, echoic and indirect negation. These functions explain its stable and continuous use. Specifically, we argue that these two functions play a key role in both ironic compliments and criticisms.

In order to explain these two functions, we must refer to the literal meaning of ironic utterances. Consider the following situation: Ana and her friends realize that Peter has betrayed their plans. Ana says, in an ironic tone of voice:

(*s*)   Peter is a friend.

The literal meaning of sentence (*s*) plays two roles in Ana's communicative plan. First, as Wilson and Sperber (2012) would put it, her utterance *evokes* a representation that is contextually available—be it a previously held hope, an expectation, or a general norm of social conduct—which resembles in content the proposition literally expressed by sentence (*s*). Second, as Giora (1995) would say, Ana *indicates* a certain desired or expected state of affairs that corresponds to the literal interpretation of her words.

Irony operates on both the evoked representation and the indicated desired state of affairs. In the former case, irony is *echoic*, meaning it expresses the speaker's dissociative attitude toward the evoked representation. For example, Ana uses irony to express her negative attitude toward her previously held hope, thereby presenting it as naïve, unrealistic, or unwarranted. In the latter case, irony serves as an indirect negation. This enables Ana to implicate that the actual state of affairs, which corresponds to the contextual interpretation of her words, i.e., the state to which they *refer* (Giora et al., 2005), is far from the desired state of affairs, i.e., the indicated state corresponding to their linguistically marked interpretation.

A characteristic feature of direct negation—that is, the type that employs an explicit negation marker—is that it typically gives rise to scalar interpretations. Assume that the predicate *is a friend* encodes the following scale:

[a friend > a neutral person > an enemy]

The default interpretation of *Peter is not a friend* is that Peter is a neutral person rather than an enemy. In other words, lexicalized direct negation operates on the entire scale associated with the predicate it modifies and typically activates interpretations that are close to the literal meaning of its argument. By contrast, irony normally *avoids* these approximate interpretations and evokes more distant ones (Giora, 1995, p. 242). For example, the ironic utterance of the sentence (s) implicates that Peter is far from being a friend.

We argue that echo and indirect negation are crucial to the functioning of ironic compliments and criticisms, enhancing our basic illocutionary competence, as discussed in Section 1. Specifically, we propose the following two hypotheses. The first, h_1, states that the felicity of an ironic evaluative act, when expressed through a certain primarily performative construction for complimenting or criticizing, requires a contextually available evaluative judgment that corresponds to the literal interpretation of the speaker's utterance (Witek, 2022b). The second hypothesis, h_2, is that irony functions effectively as an indirect illocutionary negation, as defined by Searle (1969), which transforms the force of an utterance it would have if taken literally into its opposite.

To elaborate on h_1, consider again sentences (i) and (o), discussed in Section 1. The ironic utterance of (i) is an act of criticism, whereas the ironic utterance of (o) is a compliment. In short, the former is an ironic criticism and the latter is an ironic compliment. As Panzeri et al. (2022, p. 760) note, ironic criticisms are easier to identify and interpret because they echo positive evaluative judgments, which are default components of most contexts (see also Witek, 2022b). For example, we normally expect people who take the floor at a public event to be good speakers; consequently, the echoic and, hence, ironic nature of the utterance of (i) is easily recognized. By contrast, the echoic nature of (o) requires that there be a contextually available evaluative judgment—whether in the form of a previously activated suspicion or fear—that the addressee is a poor speaker. If this requirement is not met, the purported act of ironizing fails, and the speaker's plan to deliver an ironic compliment misfires. In general, one of the felicity conditions for performing an ironic evaluative illocutionary act is that there be a contextually available evaluative judgment that the speaker's words can evoke.

Let us move on to discussing h_2. The idea that irony affects illocutionary acts is not new. For example, David J. Amante claims that "[i]rony operates by covertly negating one or more of the conditions and rules underlying most

non-ironic speech acts. The illocutionary force of a speech act is retained but rather curiously blunted so that a perlocutionary-like effect is added" (Amante, 1981, p. 78). In our view, however, irony serves effectively as an illocutionary negation, as outlined by Searle. This means that the force on which it operates is not retained, but turned into its opposite. In other words, the actual force of an ironic utterance *is far from* the literally indicated force of the uttered sentence. Sentence (*i*) exemplifies the construction [NP is a good/great NP], which is one of the formulas commonly used for direct and literal acts of praising and complimenting. When uttered ironically, however, it serves to express the speaker's disappointment in, rather than admiration for, the addressee's speech and functions as an act of criticism. Similarly, the ironic utterance of sentence (*o*), which uses the construction [NP is a bad/terrible NP], expresses the speaker's admiration for the addressee's performance and functions as a compliment.

3. Empirical studies: sample ironic utterances

3.1. Detection and inference. Theory of mind and meta-representing in irony comprehension

In research on the irony comprehension in individuals with ASD, a widely accepted premise is the critical role of theory of mind (ToM) in interpreting ironic utterances. ToM is a key component of the human system for social cognition and refers to the cognitive capacity to attribute and reason about others' mental states, such as beliefs, intentions, and emotions (Nilsen et al., 2011; Sullivan et al., 1995). First-order ToM involves reasoning about another person's beliefs, whereas second-order ToM enables individuals to infer what one person believes about another's thoughts (Wimmer & Perner, 1983). Comprehending verbal irony thus necessitates perspective-taking to recognize the speaker's communicative intent or the ability to represent another's belief about a third person's mental state (Happé, 2013).

The link between ToM and figurative language comprehension in ASD was first explored by Francesca Happé (1993), who found that autistic children struggled with metaphor and irony. She attributed these difficulties to deficits in first- and second-order ToM, respectively. Subsequent studies have reinforced the role of ToM, particularly second-order ToM, in irony comprehension in ASD (Saban-Bezalel et al., 2019; Panzeri et al., 2022;

Song et al., 2023). Neuroimaging research has provided further support. For example, Wang et al. (2006) reported reduced activation in mentalizing-related brain regions, including the medial prefrontal cortex (MPFC) and the superior temporal gyrus, in autistic individuals engaged in irony processing. However, when participants were explicitly directed to attend to prosodic or facial cues, there was a significant increase in MPFC activity. This indicates that under certain conditions, the neural substrates supporting mentalizing abilities may remain functionally intact in individuals with ASD. Huang et al. (2015) demonstrated a correlation between ToM competence and irony comprehension in individuals with ASD, but not in typically developing (TD) children. However, this correlation was not tied to a specific ToM level; no differences emerged between autistic individuals who passed first- and second-order ToM tasks. This contrasts with Happé's (1993) findings. Despite some inconsistencies, the presented findings suggest that ToM is a key determinant of irony comprehension in autistic individuals, though its precise role remains subject to further investigation.

Empirical research on ToM and irony comprehension in ASD is based on the idea that ToM helps detect nonliteral utterances and infer the speaker's intent and attitude, which are both crucial for processing irony. Studies distinguish between detecting a statement's nonliteral nature (violating the Gricean Maxim of Quality) and inferring the speaker's intent and attitude. Ackerman (1983) and Dews and Winner (1997) proposed a two-stage model for interpreting irony. Hancock et al. (2000) found that 5- and 6-year-olds were better at identifying speaker belief than intent, which suggests that these processes are distinct. Belief judgments rely on first-order reasoning, while intent judgments require second-order reasoning. First-order reasoning develops by age 5–6 and second-order reasoning develops by age 6–8 (Perner & Wimmer, 1985).

Winner et al. (1988) proposed a three-component model of irony comprehension: (*i*) recognizing the incongruity between the ironic utterance and the context; (*ii*) understanding that the speaker does not believe their literal words; and (*iii*) inferring the speaker's intent and evaluative stance, such as complimenting or criticizing. Stages (*i*) and (*ii*) align with the detection process in Ackerman's and Hancock's framework, while stage (*iii*) corresponds to the inference process. While Winner et al.'s model offers a more detailed breakdown, Ackerman's and Hancock's two-stage model provides a broader distinction between detection and inference, unifying key cognitive steps.

3.2. Selected empirical studies on irony comprehension in ASD

The two-stage framework discussed in Subsection 3.1 is clearly reflected in the experimental designs of the studies under analysis.

Pexman et al. (2011) presented twelve puppet show scenarios to high-functioning ASD (HFASD) participants, each of which ended with either an ironic or literal criticism or compliment. Ironic crticisms were conveyed with a mocking, insincere intonation, whereas ironic compliments were conveyed in a jokingly positive manner. After each scenario, participants answered three questions assessing the speaker's intent, belief, and intent to be funny (see Pexman et al., 2011, for procedural details). The following example illustrates a context followed by literal and ironic statements.

> Shannon plays on a soccer team with John. It is the last few minutes of a game.
> Outcome information (negative): John kicks the ball, missing the net. Shannon said:
> Statement: That was a terrible play. (*Literal criticism*)
>   That was a great play. (*Ironic criticism*)
> Outcome information (positive): John kicks the ball, scoring a goal. Shannon said:
> Statement: That was a terrible play. (*Ironic compliment*)
>   That was a great play. (*Literal compliment*)

After the puppet show, participants were asked the following questions:[3]

> Ironic utterance: *That was a great play!*
> $Q_{1.1}$ Was Shannon like the shark or like the duck?
> $Q_{1.2}$ When Shannon said, *That was a great play*, did she think that John made a good play or a bad play?

Instead of verbal explanations, children selected either a smiling duck or a scowling shark with sharp teeth, symbolizing a nice or a mean speaker, respectively. Since both ironic and literal criticisms signal a negative attitude,

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[3]   Pexman et al. (2011), as well as Glenwright and Agbayewa (2012), assessed participants' perception of the speaker's intent to be funny by asking the speaker a humor question. For example, they asked, "When Shannon said, *That was a great play*, show me how funny or serious she was trying to be" (Pexman et al., 2011, p. 1101). For the purpose of this article, we focus exclusively on the social-cognitive aspects related to assessing the speaker's mind (Filippova & Astington, 2010), i.e., speaker belief and speaker intent questions.

while both ironic and literal compliments convey a positive one, $Q_{1.1}$ assessed participants' ability to recognize the speaker's evaluative stance. A correct interpretation of criticisms required recognizing a negative evaluation, whereas compliments required identifying a positive one. $Q_{1.2}$ could be rephrased as *Was the speaker sincere or not?*—which aligns with Panzeri et al.'s (2022) question approach in assessing irony comprehension with the question *What did the speaker mean?*

Glenwright and Agbayewa (2012) examined irony comprehension in individuals with HFASD in a computer-mediated setting, aiming to reduce social and verbal demands. Fourteen participants with HFASD (mean age 12.4 years) engaged in *Bubble Dialogue* conversations, where a speaker directed either an ironic criticism (in a sarcastic tone) or a literal compliment (in a sincere tone) at an addressee. The study examined whether TD and HFASD adolescents could consider the speaker-addressee relationship when interpreting nonliteral beliefs and intent. Participants responded to six scenarios (three ironic and three literal) by typing their reactions and answering forced-choice questions about the speaker's belief, intent, humor, and memory of the relationship. Intent was evaluated on a six-point face scale, ranging from "very nice" to "very mean."

> Ironic utterance: *You are a good listener!*
> $Q_{2.1}$ When Christian said, *You are a good listener*, did he think that Shane was a good listener or a bad listener?
> $Q_{2.2}$ Point to one of these faces to show me how mean or how nice Christian was being when he said, *You are a good listener*.
> $Q_{2.3}$ At the beginning of this conversation, how did it say that Christian and Shane knew each other?

$Q_{2.1}$ assessed participants' ability to distinguish between literal and ironic utterances by evaluating whether they interpreted statements as positive or negative evaluations. $Q_{2.2}$ evaluated whether participants perceived the speaker's intent as mean or nice. This required them to select from a six-point facial rating scale. While $Q_{2.1}$ required a one-word response, $Q_{2.3}$, an open-ended question, examined ASD participants' recall of the speaker-addressee relationship (older relative, peer, or unspecified). The study aimed to determine if individuals with ASD considered relational context when interpreting nonliteral beliefs or communicative intent, and whether responses differed between typed open-ended and forced-choice verbal tasks.

Panzeri et al. (2022) used similar irony comprehension task, incorporating both ironic criticisms and ironic compliments. Participants listened to ten short stories featuring two interacting characters, each ending with a remark that could be interpreted as either literal or ironic and delivered with either a sincere or ironic intonation. The pre-recorded audio was presented via a laptop and accompanied by illustrative images. The following example represents the ironic criticism condition.

> Introductory background:
> Tommy is spending the afternoon playing at Paul's home. Tommy asks Paul to play with the LEGO bricks to build a big spaceship. Initially, Paul does not want to, because he is worried that after playing his room would be a mess. Tommy promises that he will help Paul to tidy up the room.
> Contextual information:
> But when it is time to go home, he leaves without helping Paul. The room remains a mess. So, Paul tells Tommy:
> Target sentence: *Thanks for your help in tidying up!*

After each story, TD and ASD children (aged 3.75–10.25; mean age 7.26) answered three questions to evaluate their ability to detect the speaker's meaning (literal or ironic), recognize the context (control), and understand the speaker's attitude (compliment or criticism).

> Ironic utterance: *Thanks for your help in tidying up!*
> $Q_{3.1}$ Did Paul mean that: Tommy helped him or Tommy did not help him?
> $Q_{3.2}$ How was Paul's room when Tommy left?
> $Q_{3.3}$ When Paul thanked Tommy for his help in tidying up, Paul wanted to compliment or criticize Tommy?

$Q_{3.1}$ assessed whether participants recognized the utterance as literal or ironic. To answer this, individuals with ASD needed to detect the speaker's meaning by recognizing whether the statement was sincere or antiphrastic. $Q_{3.2}$, a control question, tested recall of contextual details to rule out memory deficits as a factor in irony comprehension. $Q_{3.3}$ evaluated the ability to infer the speaker's attitude, i.e., whether the remark functioned as a compliment or a criticism. Successful interpretation required integrating linguistic, pragmatic, and contextual cues to infer the speaker's intent.

In summary, as shown in Table 2, each study was designed to evaluate participants' ability to both *detect* the nonliteral nature of a target utterance and *infer* the speaker's intent.

Table 2. Questions assessing *detection* and *inference* in irony comprehension

Steps in irony comprehension	Assessing questions		
	Pexman et al., (2011)	Glenwright & Abgayewa, (2012)	Panzeri et al., (2022)
detection	$Q_{1.2}$	$Q_{2.1}$	$Q_{3.1}$ & $Q_{3.2}$
inference	$Q_{1.1}$	$Q_{2.2}$	$Q_{3.3}$

3.3. Sample ironic utterances used in the empirical studies under analysis

In this section, we use the theoretical framework outlined in Sections 1 and 2 to analyze the ironic utterances in the empirical studies. As outlined in Section 3.1, we propose that comprehension of these utterances involves three steps, with the first two corresponding to detection and the third to inference.

s_1 Identifying the illocutionary potential of the words uttered by the speaker.

s_2 Recognizing that the utterance cannot be taken literally because the content and Austinian presuppositions of its literal interpretation do not align with the context, indicating that the speaker does not hold certain beliefs.

s_3 Determining the actual illocutionary force of the utterance (complimenting or criticizing) by negating the force it would have if taken literally.

Consider the following two ironic utterances presented by Pexman et al. (2011):

(1) That was a *great* play.
     context: John kicks the ball, missing the net. Shannon says (1)
(2) That was a *terrible* play.
     context: John kicks the ball, scoring a goal. Shannon says (2)

Utterances (1) and (2) follow primarily performative constructions that are typically used for evaluative speech acts, such as [NP is a great/terrible NP]. These formulas encode certain illocutionary potentials, which are further narrowed by linguistic cues. Specifically, (1) contains *a great play*, which

expresses a respect-relative evaluative concept (Väyrynen, 2021, p. 6) and indicates the force of complimenting; similarly, (2) employs *a terrible play*, indicating the force of criticizing. However, both (1) and (2), which are ironic, function as acts of criticism and compliment, respectively.

According to Winner's model, detecting nonliteral meaning requires recognizing the incongruity between an utterance's content and its context, i.e., a blatant violation of Grice's Maxim of Quality (Grice, 1989). However, we argue that such detection typically involves rudimentary illocutionary competence. In (1), *a great play* indicates the force of complimenting and, by extension, the speaker's admiration for John as a successful soccer player. Still, the actual context contradicts this attitude. In short, the situation in which (1) is uttered does not align with what its sincerity, as an act of complimenting, would require. Taken literally, then, (1) would be read as a blatantly insincere compliment. Recognizing this insincerity aligns with detecting the speaker's attitude, enabling participants to answer $Q_{1.2}$ accurately.

In our view, identifying the actual illocutionary force of (1) requires negating its linguistically indicated force. As outlined in h_2, irony functions as an illocutionary negation in Searle's sense. While (1) exemplifies the [NP is a great NP] structure typically used for complimenting, contextual and prosodic cues indicate that its literally indicated force must be reversed, conveying disappointment rather than admiration.

According to h_1, the literal content of an ironic utterance should elicit a contextually available evaluative judgment. Ironic criticisms echo positive judgments, which are easily recognizable. Shannon's ironic statement in (1) echoes the default expectation that a skilled soccer play should lead to a goal, but the actual context contradicts this, requiring reinterpretation of *great* in light of the unfavorable reality. Rather than praise, Shannon expresses disapproval. Importantly, the situational context—John missing the net—clarifies the target of the criticism, ensuring that the utterance functions as an addressee-directed critique. The felicity of this more specific act presupposes$_A$ that John is responsible for the outcome of the play. In the analyzed example, then, illocutionary competence is essential not only for detecting the nonliteral nature of (1) but also for inferring Shannon's intent. This process involves narrowing and negating the illocutionary potential of her words.

Similarly, in (2), detecting irony and inferring the speaker's intent to compliment requires recognizing that the primarily performative construction [NP is a terrible NP] typically yields criticism. However, contextual cues—John scoring a goal—and a positive, joking intonation signal that the utterance cannot be taken literally. The act of criticism has the speaker's disapproving and blaming attitude toward what the addressee did as its sincerity condition. In contrast, the context of (2) indicates the incongruity between the content of this attitude and the reality, necessitating reinterpretation. Recognizing this incongruity, along with illocutionary competence, is crucial for detecting the speaker's attitude. This allows participants to determine that the literally negative expression *terrible play* actually conveys a positive valuation.

In line with h_1, the felicity of an ironic compliment requires that (2) evoke a contextually available negative evaluation corresponding to its literal interpretation. However, as Kreuz and Link (2002) note, ironic compliments refer to negative expectations, which are uncommon and rarely occur in everyday interactions. (2) would be more natural if Shannon had previously expressed concerns about the play going badly (Wilson & Sperber, 2012). Without such prior context, the irony fails, and the compliment purported to be ironic misfires. Ironic compliments are generally more difficult to comprehend and appreciate. This difficulty is linked to the asymmetry of affect. Literature also indicates that people typically understand ironic criticisms earlier than ironic compliments (Pexman & Glenwright, 2007). Consequently, individuals with ASD may have more difficulty inferring the ironic intent of (2). In other words, the absence of a clear echoic reference makes (2) particularly difficult to interpret. As Giora (1995) argues, inferences about ironic compliments require *double negation*, which complicates judgments of speaker attitude because the correct answer will only be given if the negative literal meaning is successfully negated. However, we argue that the irony in (2) functions effectively as illocutionary negation. If the participant correctly infers Shannon's ironic intent, the linguistically indicated force is negated, transforming the criticism into a compliment.

The following analyses aim to demonstrate how the constructional diversity of ironic utterances influences their interpretive complexity and how the illocutionary and cognitive demands placed on participants with ASD vary based on the contextual and linguistic features of each ironic utterance.

Let us now discuss selected ironic utterances presented to participants with ASD by Glenwright and Agbayewa (2012) and Panzeri et al. (2022).

(3)   You are a *good* listener.
      [NP is a good NP]
      context: Christian to Shane, who does not follow Christian's instructions.
(4)   You are *really good* at this.
      [NP is really ADJ$_{EV}$]
      context: Andrew to Phil, who failed to score a basket.
      (Glenwright & Agbayewa, 2012)
(5)   The party was *a lot of fun*!
      [NP is an NP$_{EV}$]
      context: Antonella and Federica are friends and decided to organize
      their birthday party together. F. wants to invite her friends over and
      says everyone will have a lot of fun, but A. is afraid the party will be
      boring and prefers to have it outdoors. In the end, F. insists, and they
      organize the house party. But there is nothing to do and everyone is
      bored. At the end of the party, A. tells F.: (5)
(6)   What *a great idea* to go on vacation with the tent!
      [What a great NP]
      context: Carlo proposes to Gulia to go on vacation with the tent. Giulia
      is not convinced, and she is afraid of bad weather. Carlo promises they
      will have a nice holiday, and then they leave. Unfortunately, it rains all
      week, and Giulia falls ill. During their return trip, Giulia tells Carlo: (6)
(7)   The drawing turned out *really bad*!
      [NP is really ADJ$_{EV}$]
      context: Emma does not want to submit a drawing to a competition,
      because she says she is no good at drawing. In the end, the teacher
      convinced her, and E. draws a beautiful picture of her family and wins
      the school award. Then the teacher says to E.:(7)
      (Panzeri et al., 2022)

When interpreted literally, the ironic utterances above function as primary performative evaluative acts, as indicated by their syntactic constructions. Their illocutionary potential is further narrowed by specific evaluative terms, yielding criticism in (3), (4), (5) and (6), while (7) serves as a compliment. More specifically, the italicized expressions—*a good listener,*

be good at and *a great idea*—are respect-relative evaluative concepts, which describe good qualities in relation to a specific, non-evaluatively determined respect. Their evaluative meaning is context-dependent rather than inherent. Similarly, *really bad* serves a similar function, specifying a certain way of being bad. The noun phrase *a lot of fun* functions as an evaluative term, encoding a subjective assessment that reflects the speaker's affective stance toward the event.

The illocutionary potential of constructions (3–6) and (7) is determined by the felicity conditions governing acts of complimenting and criticizing, respectively. As outlined in Table 1, the sincerity of a compliment requires the speaker to believe that the addressee has performed or achieved something deemed good in a certain way and, consequently, admirable or praiseworthy. For example, taken literally, (3) conveys Christian's positive evaluative judgment of Shane's conduct and expresses his admiration. The sincerity of the act of complimenting presupposes that Christian believes Shane has indeed followed his instructions. Interestingly, (6) can be assigned the literal force of complimenting Carlo rather than merely praising the idea of going camping if it is part of the common ground that it was Carlo who proposed the idea. This requirement constitutes an Austinian presupposition of Giulia's utterance, construed as an audience-directed evaluation. Similarly, (7), when uttered seriously, constitutes a felicitous act of audience-directed criticism only if it was Emma who made the drawing.

Importantly, the literal interpretations of the utterances in question, which signal their illocutionary potential, conflict with contextual and prosodic cues that indicate their actual forces. For example, (5), when uttered with a mocking and insincere intonation in the context where Federica insisted on organizing the party that ultimately turned out to be boring, functions as an act of criticism rather than praise. Similarly, in (3), a primarily performative formula typically associated with direct praise is used to express Christian's disappointment in Shane's behavior. In line with h_2, determining the speaker's actual intent requires negating the literal illocutionary force of their words. Assuming that irony functions as an illocutionary negation in the Searlean sense, the force of complimenting is converted into criticism and vice versa. Importantly, (7) functions as an ironic compliment—i.e., an act whose literally indicated force of criticizing is transformed into its opposite—only when interpreted in a context where Emma initially doubted her drawing abilities.

Scenarios (5–7) illustrate how literal meanings contribute to the evocation of contextually available thoughts, facilitating the inference of the speaker's ironic intent and, hence, the actual force of their words. While scenarios (3) and (4) evoke general expectations or norms, such as the assumption that one will follow instructions (3), or that a player should exhibit skill in basketball (4), utterances (5–7) echo prior expectations or concerns that become salient within the context. In (5), the noun phrase *a lot of fun*, typically associated with a positive experience, directly recalls Frederica's prior assurance about the party's success, serving as a vehicle for Antonella's dissociative stance. Similarly, *a great idea* in (6) evokes Carlo's initial promise and is used by Giulia to express her negative attitude toward this assurance in light of the actual experience. Since ironic compliments can misfire without an explicit reference to an echoed belief, the retrievability of such a belief is particularly relevant in (7), where the utterance directly references Emma's prior self-assessment, providing a clear interpretive anchor. Given the relative infrequency of ironic compliments in everyday discourse, the explicitness of the echoed content in (7) may improve comprehension, especially for participants with ASD.

The context of an evaluative act helps determine who is being praised or blamed by the speaker. First, consider situations in which utterances (3–6) and utterance (7) are made seriously to perform sincere acts of complimenting and criticizing, respectively. In utterances (3) and (4), the speakers use the pronoun *you* to refer directly to their interlocutors as the people being praised. In contrast, the individuals evaluated in (5), (6), and (7)—and the same holds for (1) and (2)—are identified through Austinian presupposition rather than direct lexicalized reference. Specifically, the felicity of a literal utterance of (5), as an act of complimenting Frederica, presupposes that she organized the party. Recognizing this presupposition allows us to narrow the general force of praising, which is indicated by the $[NP \text{ is a } NP_{EV}]$ construction, to the specific force of complimenting.[4] Similarly, the felicity of a literal utterance of (6) as an act of complimenting Carlo presupposes$_A$ that it was he who proposed the camping trip. Similarly, the felicity of literally uttering (7) as an act of criticizing Emma requires that it was Emma who made the drawing. It is important to note that both the referential properties of utterances (3) and (4) and the Austinian

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[4]   See the discussion of examples (*h*), (*k*), and (*p*) in Section 1 for further details.

presuppositions of utterances (5), (6), and (7) are maintained in their ironic interpretations. Austinian presuppositions of illocutionary acts survive embedding under the scope of irony construed as indirect illocutionary negation. Similarly, linguistically triggered Stalnakerian presuppositions survive under lexicalized direct negation.

Finally, consider the following contextualized utterances.

(8) You are so *careful*.
[NP is so ADJ$_{EV}$]
context: Jon to Patrick, who spills some noodles on his shirt.
(Glenwright & Agbayewa, 2012)

(9) You are a real *bungler*!
[NP is a real NP$_{EV}$]
context: Mom asks her daughter Chiara to help her preparing a cake. C. does not want to mess things up and she is afraid to bungle things. Then C. succeeds in preparing a cake without making a mess. Mom tells Chiara: (9)

(10) What *dirty* hands you have!
[What a ADJ$_{EV}$ NP]
context: Federico is in the garden playing and he wants to have a banana as a snack. His father tells him to rinse his hands with the tap water in the garden, but F. prefers to go to the bathroom at home to use the soap. He absolutely does not want to have his hands dirty. F. washes his hands until they are completely clean. Dad says to F.: (10)

(11) *Thanks* for your *help* in tidying!
[Thanks for your NP]
Tommy asks Paul to play with his bricks. Initially, P. does not want to, because he is worried that after playing his room would be a mess. T. promises that he will help P. to tidy up the room. But then, T. leaves without helping P. The room remains a mess. Paul tells Tommy: (11)
(Panzeri et al., 2022)

The ironic utterances in (8–10) function as primary performatives, with their illocutionary potentials modified by specific lexical and contextual cues. A key linguistic feature of these constructions is the presence of thick terms (Väyrynen, 2021), including the adjectives *careful*, *bungler*, and *dirty*, as well as the verb *help*. These terms not only describe certain states

or actions but also inherently encode an evaluative stance. This makes them crucial in determining whether an utterance is intended as praise or criticism. For individuals with ASD, correctly interpreting these ironic utterances requires recognizing their illocutionary potential and understanding that thick terms inherently convey evaluative meaning. It also requires discerning whether this evaluation aligns with the expected interpretation in context or is subverted through irony.

In (8), *careful* typically signals a positive assessment of attentiveness; however, in this context, it contradicts Patrick's observable clumsiness. Similarly, *bungler* in (9) and *dirty* in (10) usually have negative connotations. However, the former is incongruent with Chiara's demonstrated competence in baking, and the latter contradicts Federico's insistence on keeping his hands clean, indicating that the speaker does not sincerely endorse the propositional content. To infer the intended illocutionary force of an utterance, participants must apply illocutionary negation to reverse its literally determined force. Since (9) and (10) serve as ironic compliments, recognizing their echoic dimension is essential to identifying the speaker's true intent. In (9), *bungler* recalls Chiara's initial apprehension about making mistakes, while in (10), *dirty* evokes Federico's concern that rinsing his hands in the garden might be insufficient. These meet the requirement of a contextually available evaluative judgment in ironic compliments, as specified in h_1. The contextual incongruity, reinforced by intonational cues and the presence of echoic content, necessitates inverting the utterances' illocutionary force, ultimately establishing (9) and (10) as ironic compliments. In contrast, the ironic nature of (8) is more easily recognized because it invokes a positive evaluative judgment that aligns with default contextual expectations, making its inversion through irony more intuitive.

Finally, let's focus on Paul's ironic utterance (11). Taken literally, it would express Paul's gratitude and appreciation for Tommy's conduct. Unlike the previous examples, (11) is an explicit performative. It conforms to the structure of an expressive illocutionary act, as classified by Searle, incorporating the performative verb *thank*. As noted in Section 1, Searle (1979) argues that the propositional content of an explicitly performative act of thanking is neither expressed nor asserted, but presupposed. Specifically, in uttering (11) literally, Paul would presuppose that Tommy helped him to tidy up, with this presupposition being triggered by the possessive noun phrase *your help in tidying up*.

According to Searle, the *preparatory rule* for an act of thanking specifies that the addressee benefits the speaker and that the speaker believes this to be true. "The preparatory rule [for an act] tells us (at least part of) what [the speaker] *implies* in the performance of the act" (Searle, 1969, p. 65). In our view, it tells us what the felicity of the act presupposes in the Austinian sense. The *sincerity rule*, in turn, specifies that the speaker feels grateful or appreciative for the addressee's conduct. Accordingly, (11) has the speaker's gratitude or appreciation as its sincerity condition. In accordance with the *essential rule*, (11) is an expression of gratitude or appreciation.

Like utterance (*a*) discussed in Section 1, the literal utterance of (11) gives rise to a Sincerity-driven implicature indicating that the addressee's help in tidying the room is good and therefore praiseworthy. Its default perlocutionary goal is to please the addressee and make them feel better. In short, it has the practical effects characteristic of praising and complimenting and, as a result, serves as a standardized indirect act of praising.

Let's now return to discussing Paul's ironic utterance of (11). According to Panzeri et al. (2022, p. 760), in order to recognize its ironic character, i.e., to answer $Q_{3.1}$, the participant relies on "the incongruence between the context and the statement." From our perspective, the participant must first recognize what presuppositions accompany the literal act of thanking in (11) and then detect the incongruence between this presupposed content and the actual context. In other words, identifying the nonliteral character of (11) requires recognizing that, if construed as a purported act of thanking, it would result in a misfire.

While correctly identifying contextual incongruity in $Q_{3.2}$ is crucial, it is insufficient on its own for inferring whether the speaker's attitude reflects praise or blame, as assessed in $Q_{3.3}$. According to h_2, participants must apply illocutionary negation to invert the conventionally indicated force. By uttering (11) ironically, Paul shows that the actual action is far from the intended meaning of (11) as a standard indirect compliment. Conversely, an explicit negation, such as *I do not thank you for your help in tidying up!*, would fail to function as an instance of counter-thanking or counter-complimenting. This observation reinforces the claim that, when operating as an illocutionary negation in the Searlean sense, irony is more effective than lexicalized negation in signaling speaker intent.

4. Conclusion

In this paper, we have argued that interpreting ironic utterances used as experimental materials in studies on irony comprehension in children with ASD requires significant illocutionary competence. Specifically, this involves the following:

(i)   the ability to use syntactically and lexically coded information to determine the illocutionary potential of an utterance,

(ii)   the capacity to identify Austinian presuppositions of illocutionary acts, and

(iii) the mastery of irony as an illocutionary negation.

Components (*i*) and (*ii*) pertain to detecting the speaker's beliefs and recognizing the nonliteral nature of their utterance. In other words, these components enable listeners to complete steps s_1 and s_2 of the irony comprehension process, as outlined in Subsection 3.3. Component (*iii*), in turn, relates to inferring the speaker's intent—step s_3 in the process. Interestingly, when construed as an illocutionary negation, irony does not cancel the Austinian presuppositions of the acts on which it operates. There is an instructive analogy between Austinian and lexically triggered Stalnakerian presuppositions: the latter survive embedding under the scope of lexicalized negation, whereas the former persist under the scope of indirect negation.

Our key message, then, is that our system for social cognition, which enables us to comprehend ironic utterances, relies not only on mind-reading abilities but also on a considerable degree of illocutionary competence. Consequently, both existing and future results of empirical studies on irony comprehension should take into account possible differences in illocutionary competence among participants—that is, variations in an individual's ability to understand and use language appropriately to perform communicative acts, such as complimenting or criticizing.

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