

Hearing Loss and Sarcasm: The Problem is Conceptual NOT Perceptual



Individuals with hearing loss often have difficulty detecting and/or interpreting sarcasm. These difficulties can be as severe as they are for persons with autism spectrum disorder and challenges often continue into adulthood^{1,2}. Even children with good language and social skill development are at risk for comprehension of sarcasm, or verbal irony.

Even when children with hearing loss have mastered language and social skills milestones during the preschool years,

there is no guarantee that they will develop an age-appropriate understanding of verbal irony later in life.

The ability to understand the different types of sarcasm gains importance when we recognize how useful verbal irony is in our social lives. When all academic and work settings are considered, about 8% of conversational turns among adolescents and adults ironic^{3,4}. Being able to successfully use irony is associated with social competence, popularity, and peer leadership skills^{5,6}. Irony is used to express a wide range of pragmatic functions, including:

- **Ironic criticisms** (intended to rebuke; e.g., 'You look fantastic' said to someone who looks disheveled)
- **Ironic compliments** (intended to praise; e.g., 'You look horrible' said to someone who looks stunning)
- **Hyperbole** (saying more than is intended; e.g., 'Yeah, he's the most talented person on the planet' to communicate that someone's talent is modest)
- **Understatement** (saying less than is intended; e.g., 'You can tell he's upset' said about someone displaying rage to communicate that the discontent is obvious)
- **Rhetorical questions** (e.g., 'How many times do I have to tell you to stop?')
- **Offerings** (e.g., 'Have another slice of cake' to someone who has already eaten most of it)
- **Over-polite requests** (e.g., 'Would you mind very much if I asked you to consider cleaning your room sometime this year?' to a slovenly housemate)

Sarcasm is a special case of verbal irony: one that is intended to criticize or ridicule another person (e.g., 'You're a terrific friend!' to express discontent). Thus, not all irony is sarcastic but all sarcasm is ironic!

Why is verbal irony so difficult for children with hearing loss?

There are a few reasons why verbal irony understanding is challenging for persons who are deaf or hard of hearing. The one we usually hear about involves difficulty picking up the auditory cues that signal irony:

“He can’t understand the tone in a voice. He never has been able to understand sarcasm. He doesn’t hear that change in the tone of voice, and he doesn’t know what it means.”
~Father of a 21-year-old with hearing loss⁷

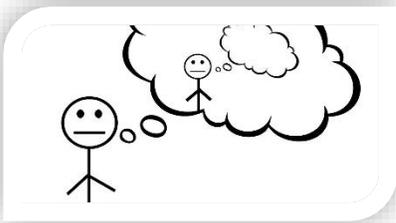
When considering the importance of auditory cues, there are two crucial points to consider:

1. Speakers sometimes use an ‘ironic tone of voice’ (slow speaking rate, heavy stress, lower pitch) as a cue to irony. Visual cues can also signal irony (e.g., facial expression, body language).
2. Irony can be delivered in a completely deadpan style (no vocal or facial/body cues)

So, auditory cues are neither necessary nor sufficient to produce or detect irony. If the problem is not necessarily perceptual, it is likely conceptual and this is the preferred explanation among contemporary researchers studying hearing loss and its relationship to ‘Theory of Mind’.

Theory of Mind (now used interchangeably with the term ‘social cognition’) refers to the ability to make inferences and reason about the causes and consequences of our own and others’ minds including people’s desires, attitudes, emotions, and thoughts.

So how do Theory of Mind concepts undergird our understanding of verbal irony? Although the precise age of mastery depends on the kind of irony and the nature of the cues available, verbal irony comprehension is a late-emerging social competency in hearing children (around 10 years of age). This is, in part, because it relies on advanced Theory of Mind concepts. These include the ability to think about thinking (a.k.a. metacognition) which is a sophisticated intellectual achievement. Said another way, to understand verbal irony, *“I need to understand what you understand, and I need to make inferences about what you intend for me to think or know.”*



We see this clearly in what is called the ‘intentionality’ aspect of irony comprehension⁸. **Intentionality** refers to the fact that ironic statements are intentionally insincere, and the listener needs to understand that the speaker expects the listener to know that the insincerity is intended.

Verbal irony is a late-emerging, advanced social competency because children need years of experience to accrue the social knowledge needed to make accurate judgments about the meaning and intent of ironic statements. To interpret irony correctly, children also need to

understand the utterance in context. All irony is context-dependent in that the meaning depends on the circumstances of which both the speaker and listener need be aware. This includes the ability to recognize and understand social norms and expectations. When it is raining at the beach and someone says, 'What a nice day', we understand that what they really want to communicate is 'What horrible weather.' They are also communicating disappointment and frustration with the situation. We know this because we are (implicitly) aware that our social norm or expectation is that people prefer to go to the beach when it is warm and sunny out.

Verbal irony can be 'about' a lot of different things. It requires a big general fund of knowledge, and degree of social and cultural learning matter. There is a lot of 'stuff' that we just know and that we expect everyone else to know too. This is the shared social and cultural knowledge that hearing children acquire over time through incidental learning and language socialization. Thus, the conceptual problem with irony is rooted in the 'Conversation Deficit'⁹, a general paucity of social learning opportunities, and an inability to 'catch the moment'⁶:

"You can't carry on a normal conversation. It's giving that instant comment; you can't catch the moment. By the time you've got his attention, the situation might have passed. He doesn't say he misses anything, but he wouldn't know if he's missing anything."

~Mother of 21-year-old with hearing loss

A deficit in verbal irony is indicative of broader issues

Verbal irony seems to be especially difficult for a wide range of populations (e.g., developmental disorders, learning disability, psychiatric conditions, sensory loss). Yet, in all of these cases, the underlying problem appears to be conceptual, which often causes problems in other areas for which those concepts are relevant. Here is an example from hearing loss⁷:

"She doesn't know the meaning of a joke; if you say something, it's serious. She can't see the double meaning. She'll laugh at Laurel and Hardy, it's visual; but as far as language goes, she doesn't understand, you can't play around with it."

~Mother of a 19-year-old with hearing loss

And it isn't only jokes. Difficulties with irony comprehension are usually accompanied by challenges in:

- More general humor detection and appreciation
- Distinguishing irony from other forms of non-literal language (e.g., lies, proverbs, metaphor, idioms)
- Understanding emotional display rules (e.g., smiling when you receive a disappointing gift; showing amusement when you feel embarrassed)
- Understanding 'self-conscious' emotions (e.g., embarrassment, pride, guilt; these also require sophisticated metacognition)

- Social common knowledge (again, understanding what members of a society ‘just know’ and expect everyone else to know too: e.g., there are cat people and dog people; kids would rather eat ice cream than clean their rooms. Everyone just knows this ‘stuff’!)

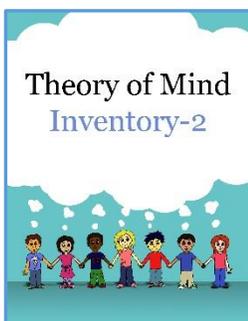
Professionals working with families with children with hearing loss often believe that if we teach the language, the social skills will follow. Yet, it is becoming increasingly clear that this is not always the case and, in fact, good language often accompanies poor social competence.

The good news – WE CAN HELP CHILDREN IMPROVE!

When thinking about how to support social competence and pragmatic language then, it is sometimes most profitable to address Theory of Mind (the concepts behind the social skills). And here is the good news: research indicates that although persons with hearing loss often evidence severe challenges in Theory of Mind, they can also benefit greatly from appropriate Theory of Mind interventions in a short period of time^{10, 11}.



And there’s more good news. Recently, new assessment tools, educational resources, and treatment materials have become available to achieve these goals. The Theory of Mind Inventory – 2¹² is an assessment and treatment planning system specifically designed to support theory of mind in persons with social learning challenges. More specifically, Theoryofmindinventory.com offers:



- Sensitive, reliable, valid, and nationally-normed **assessment** of a broad range of Theory of Mind Competency areas ([READ MORE](#))
- **Electronically generated reports** ([EXAMPLE](#)) which provide a list of likely developmentally appropriate treatment target for each client
- **Access to the Theory of Mind Atlas:** an educational resource that explains a broad range of Theory of Mind area (what it is, when it develops, and how it is disrupted in different clinical populations including HEARING LOSS). To register for free access to the Atlas, [GO HERE](#).

- **Downloadable Treatment Materials** ([see the Materials Room!](#)) to address wide range of Theory of Mind targets

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