"Theory of mind," language problems linked

Autistic individuals may be unable to understand that other people know, want, feel, or believe, or to predict behavior on the basis of such knowledge—in other words, they may lack a "theory of mind"—according to Alan Leslie, Uta Frith and Simon Baron-Cohen (see ARRI 1/4).

The researchers believe that autistic children may be unable to form *second stage representations*. That is, they understand *primary representations* ("this is a cup"), but cannot manipulate and integrate this information for such abstract skills as pretending or understanding the unseen thought processes of others.

Without a theory of mind, Frith says, "the idea that there is a way of knowing what 'makes people tick' would be totally alien. There would be no inquisitiveness about other people's beliefs . . . [Without a theory of mind,] one would merely be a detached observer of behavior."

In a new article, Frith suggests that the lack of a "theory of mind," and a related inability to determine what information is relevant, could be the roots of autistic communication problems such as:

Failure to respond to, or to initiate and sustain, conversations. "Many of the abnormalities that occur in conversations can be explained by the autistic individual not taking into account the speaker's states of mind," Frith says. "From this assumption it becomes easy to see why autistic people repeat information which the listener knows already, why they do not know when to say what, why they do not avoid embarrassing remarks, remarks that appear to be rude, or remarks that appear to be over-formal and inappropriate given a close affective relationship to the listener."

Citing the work of linguist H. P. Grice, Frith says most of us unconsciously follow certain communication rules—for instance, we speak neither too much nor too little, provide adequate information for our listeners, and avoid ambiguity. Researchers Sperber and Wilson, she says, believe these laws of communication may stem from the mind's "natural search for relevant information." A lack of a theory of mind, she says, would logically go hand-in-hand with an inability to determine what information is relevant to a listener.

Stereotyped or idiosyncratic language. Autistic speakers often rely on stock phrases and echolalia rather than speaking spontaneously. "What we want to hear from an autistic child and so rarely receive," Frith says, "is something that requires the ability to guess and anticipate what the listener might wish to hear—at that precise moment." Autistic children, she says, lack this ability to "say the right thing at the right moment" because they cannot take others' states of mind into account.

Also, autistic individuals often use obscure words and phrases which have meaning to them but not to listeners; for instance, one child would say "French toast" when he was happy. This shows, Frith says, that "the autistic speaker is not considering the work that the listener has to do in order to comprehend an utterance."

Abnormal tone of voice. Much of the meaning of language is conveyed by which words are stressed, how the voice rises and falls, and timbre of speech. Autistic speech can be puzzling, even when the words are clear, because speakers may use a sing-song or staccato voice, speak in a monotone, or stress the wrong words.

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Normally, Frith says, speakers will stress certain words to make it easier for the listener to interpret what is being said. For instance, she notes, a person asked to reply to the question, "is the baby drinking milk?" might respond, "no, the baby is drinking *juice*." Lacking insight into the listener's perspective, an autistic speaker may not realize the need for such cues.

Nonverbal communication problems. Autistic children use "instrumental" gestures (such as a "come here" hand motion), but have difficulty understanding "expressive" gestures (such a raised eyebrow). Such gestures, which require realization of one's own and others' states of mind, are vital to social communication.

"Little hints . . . regulate our interactions to great effect," Frith says. "For instance, we do not usually overstay our welcome. It is precisely such hints that are reputed to be ineffective [even] with high-functioning autistic people."

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"A new look at language and communication in autism," Uta Frith, *British Journal of Disorders of Communication*, 24, pp. 123-150, 1989; and "Prospects for a cognitive neuropsychology of autism: Hobson's choice," Alan Leslie and Uta Frith, *Psychological Review*, Vol. 97, No. 1, 1990, pp. 122-131. Address for both: Uta Frith, MRC Cognitive Development Unit, 17 Gordon Street, London WC1H 0AH, United Kingdom.

Seizure drug for behavior control?

The drug carbamazepine, frequently used to control seizures (and better known to many parents by its brand name Tegretol), also appears to reduce behavior problems in many retarded individuals, according to Harvey Langee.

Langee administered carbamazepine to residents of a state institution who had profound behavioral problems that had not responded to behavior modification or to other medications. Participants either did not have seizure disorders, or had seizures that were well controlled by other medications. Behavior problems included aggression and self-injury, hyperactivity, depression, tantrums, agitation, and hallucinations and delusions. In all cases, Langee says, "the behavioral disturbance did not appear to be under the patients' conscious control. That is, it was neither escape behavior, manipulative, attention seeking, a product of physical distress, nor a response to environmental stimuli."

76 patients participated in the study. Of those, Langee says, "30 showed a significant improvement, 31 showed no improvement, and 10 improved but did not meet study criteria." (Five patients moved and did not complete the study.) Of the 30 who improved, he reports, "27 had a previously diagnosed seizure disorder or EEG abnormality." Seventeen of Langee's patients, while responding to carbamazepine treatment, required an additional medication to fully manage their behavior disorders.

Langee notes that several patients exhibited side effects serious enough to require discontinuation of carbamazepine. *(Editor's note: side effects associated with carbamazepine include potentially fatal blood, skin and cardiovascular disorders.)*

Langee's data were re-analyzed by Lyndon Laminack, who concluded that "the role of carbamazepine appears to be more limited than the article implies," particularly since one third of those whose behaviors responded to the drug still needed additional medications. However, Laminack notes that the dosage of carbamazepine used in Langee's study was fairly conservative, and that higher doses might yield better results.

Laminack concludes that "carbamazepine may be useful in controlling undesirable behavior in about 50% of individuals with abnormal EEGs or seizure disorders [and] would be a logical consideration as a seizure control agent for persons who also have dysfunctional behavior." He feels, however, that the drug is not likely to be effective for those without epilepsy or abnormal EEGs.

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"A retrospective study of mentally retarded patients with behavioral disorders who were treated with carbamazepine," *Am. Journal on Mental Retardation*, 1989, Vol. 93, No. 6, pp. 640-643. Address: Harvey Langee, 720 SW 2nd Ave., Ste. 205, Gainesville, FL 32601.

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"Carbamazepine for behavioral disorders," Lyndon Laminack, *Am. Journal on Mental Retardation*, 1990, Vol. 94, pp. 563-564. Address: Lyndon Laminack, Fircrest School, 15230 15th Avenue NE, Seattle, WA 98155.