

Autism, Dilogic and Persons

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1. Introduction

The syndrome of autism was first systematically identified in the 1940's (Kanner 1943), and has been the focus of a broad range of work since that time (Rutter 1999). Its symptomatology is seemingly diverse, and involves a rough division between 'personal' and 'non-personal' tendencies. In the personal category are difficulties in understanding and interacting with other persons, socialisation, empathy and communication. In the non-personal category are difficulties in adaptability, occasional special abilities, and a wide range of peculiarities in learning, generalisation, pursuit of narrow interests, and so on. Some tendencies, such as peculiarities in the use of language, seem to span both categories.

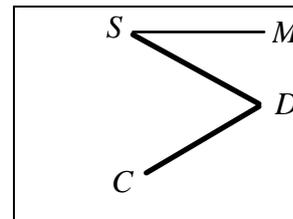
A central question in the theory of autism, therefore, is whether these two categories of impairment share a common pattern or character. It is true that received sets of diagnostic criteria (World Health Organisation 1993; American Psychiatric Association 1994), drawn from empirical observation, give the impression of a split syndrome in which non-personal and personal tendencies occur together but are different in nature. However, we cannot simply trust the language games which inform the presentation of these observations: as Wittgenstein repeatedly argued, forms of words and 'analogies in language' can have the effect of obscuring both similarities and differences between things (Peterson 1990). The main thesis of the present paper is that there does exist a pattern common to these two areas of impairment, in that both involve *dilogical structures*.

2. Dilogic

For purposes of illustration, we start with a fictitious example from the film *Rain Man*. The main character in the film, who has autism, is crossing a busy road at a pedestrian crossing. Half way across, the sign changes from 'Walk' to 'Don't Walk', and the character stops and stands still (rather than hurrying to the pavement). This situation has an identifiable structure, in that *two factors bear interactively on the same result*. A legal factor ('I am at a pedestrian crossing and the sign says "Don't Walk"') suggests stopping, while a safety factor ('I am in the middle of a road and the traffic is starting to move') suggests hurrying to the pavement. Such structures will be called 'di-logical', in the sense of involving two reasons, and the following terminology will be used to describe them.

source (S)	I am at a pedestrian crossing and the sign says 'Don't Walk'
monological result (M)	stop
context (C)	I am in the middle of a road and the traffic is starting to move
dilogical result (D)	hurry to the pavement.

This structure can be read as 'Given S, M would follow by default, but given C as well, D follows in this instance', and it can be expressed diagrammatically as follows.



What the character in the film does is to produce a monological response to this dilogical structure, ignoring the modulating influence of its context component (Peterson in press). In the present case, this modulating influence overrides the basic default of the monological response, but in other cases it may involve less radical adaptation or re-scheduling (indicating how, when or where to do something, whom to do it with, when to start and stop, how much of it to do, and so on).

3. Non-Personal Cases

In these terms, many tendencies found in autism consist in errors of *adaptation* to context, as in the illustrative example above. One case is the following of routines. The individual may have a procedure for getting up in the morning (S), and may follow this to the letter (M), despite the circumstance on this particular day of the need to leave early (C), which requires the adapted response of taking a quick shower instead of a bath (D). The individual may have a route for walking to school (S), and may insist on following this rigidly (M), despite the circumstance that there are deep puddles on the habitual side of the road (C), which could be avoided by walking on the other side of the road (D). The pattern is borne out by tests of executive function used in neuropsychology such as the Detour Reaching Task, the Wisconsin Card Sort Test and the Towers of Hanoi (Russell 1997). Once a rule (S) is understood, the individual with autism may follow it rigidly (M), despite indications (C) that execution should be delayed, terminated or temporarily suspended (D).

A related problem exists in the *differentiation* of context. Here, something is encountered which is in fact the joint product (D) of a basic factor (S) and a modulating circumstance (C). But despite accumulating evidence, the person with autism may fail to articulate this structure, and may fixate on the original context as if it were essential. Thus in the case of echolalia, a word is first heard with a particular pronunciation. This is the joint product (D) of the basic word (S) and its pronunciation on that particular occasion (C), but the individual may persist as if this original modulation were essential. The word 'impolite', for example, having first been heard with heavy intonation as 'im-pol-ite' may continue to be enunciated as such despite exposure to alternative pronunciations. Equally, a detail such as the colour of a cup may be treated as essential and the individual may refuse all others. And in classification, a species (D) which is a compound of a

genus (*S*) and a differentia (*C*) may be treated as more important than the genus itself, so that the child with autism invents a neologism for 'red men's bicycle with racing handlebars' without using the general word 'bicycle'.

In all of these cases, the odd behaviour at issue is situated within a dilogical structure, and the moment when we understand the behaviour is the moment when we locate it in relation to this structure. The child with autism walking through a puddle makes sense when we know that this is his usual route to school (and his actions are insulated from current context), and the child who refuses to use a cup at school makes sense when we learn that the cup used at home is of a different colour (and she has fixated on this contextual detail).

4. Personal cases

Problems of adaptation to context also appear on the personal side of the symptomatology of autism. In the case of tact, an individual may have something to say (*S*) and may simply say it (*M*), despite possibilities or signs of causing offence (*C*) which indicate, on this occasion, the adapted action of saying it in a moderated way or not saying it at all (*D*). Similarly, in the case of overinforming, the individual knows something (*S*) and downloads it in immoderate detail (*M*), despite the fact that only some of this is relevant to the audience (*C*), which suggests a filtered delivery (*D*). In general, a script or formula of social interaction (*S*) may be learned, but it may then be executed in an automatic or self-propelled fashion (*M*), despite contextual factors such as discouraging reactions from others (*C*) which indicate on particular occasions that execution of the script be moderated or terminated (*D*). Thus the person with autism can be insensitive to social contexts just as they can be insensitive to other contexts, and again this behaviour makes sense when we locate source and context within the larger dilogical structure.

The problem, however, is worse than this. If we are to adapt to something, we need at least to know what it is, and people with autism show significant difficulty in working out what other individuals think and feel in the first place. This impairment in 'mindreading' is not simply a domain-specific 'blindness' to persons, since individuals with autism can be taught facts and rules of 'folk psychology' or 'theory of mind'. These may be applied in a non-adapted way, as above, but they are not incomprehensible in the first place. We therefore need to ask whether there exists an additional learning strategy which is available to neurotypicals but is impaired in autism. It is relevant here that some writers have argued that mindreading can be achieved through mental simulation: the process of using our own cognitive system, adapted as required, to simulate that of another person (Goldman 1989; Gordon 1986). The question, then, is what sort of adaptation is involved. A useful focus for analysis is the false belief task (Wimmer and Perner 1983) on which people with autism show significant impairment (Baron-Cohen, Leslie and Frith 1985). A typical scenario, played out with dolls, goes as follows.

Mummy and Maxi are in the kitchen. They have a bar of chocolate and they put it in location-1. Maxi then goes away to play with his friend. During this time Mummy takes the chocolate from location-1 and puts it in location-2. Maxi then starts to come home, and wants to find the chocolate.

Against this scenario, the participant in the experiment is asked the test question 'Where does Maxi think the chocolate is?'. As argued elsewhere (Peterson and Riggs 1999) what we need to do in order to answer

this question is to ask ourselves the simple question 'Where is the chocolate?' while imposing a mask or filter which says 'ignore the fact that the chocolate was moved'. In this way we operationalise Maxi's perspective, and we achieve a virtual simulation of his database without significantly disturbing our own. The present point is that this task has a dilogical structure: we have knowledge of the entire story (*S*), and by default we would say 'in location-2' (*M*) in answer to the simple question, however under the imposed filter (*C*), we answer differently and say 'in location-1' (*D*). And in autism there is impairment in working out the dilogical response in this structure, and hence impairment in using this strategy in mindreading.

This simulation strategy belongs to the broader category of *cooperative cognition*, where we also find dilogical structures and impairment in autism. In simulation, we need to think-with the other person, so as to work out what they believe. Equally, the individual with autism may learn to skate, but not to skate-with a partner. They may learn to play an instrument but not to play-with other musicians. They may feel, but not feel-with other people in an empathetic manner, and so on. As elsewhere, the problem is not blindness to a particular domain (people's beliefs, skating, playing music, emotion), but one-handedness in dealing with scenarios of a particular structure. This allows us to understand the originality which is sometimes noted in people with autism. Accommodation of context is not necessarily a good thing, and what is appropriate and cooperative may also be compromised and pointlessly conventional. Communities gain coherence through shared dilogic, by accepting assumptions which act as filters on thought and action, and progress may require detachment from these filters so as to 'think outside the box'. And here there is no absolute right or wrong: the monological style found in autism can be seen as closing the door to cooperation, opening the door to originality, or doing both at once.

5. Conclusion

We have identified the logic of a particular type of task, and we find this to be a common factor in the seemingly diverse symptomatology of autism. It is fair to make several qualifications here. --- The causes of the clinical syndrome of autism are biological, and these may produce effects which do not fit our pattern, including additional brain damage and impediments to speech and learning. People with autism show variable performance in the tasks discussed above, and the detail of exactly why they have difficulties with dilogical structures remains to be discovered (Peterson and Bowler 2000). Also, the pattern identified is not unique to autism, and any particular error or denial of dilogic may be produced by an individual who does not have this biological condition. --- The point remains, however, that a pattern exists which it is unhelpful to obscure. And this pattern suggests, in autism and non-autism alike, that our grip on persons and our grip on things both rely on our grip on dilogical structures. This reliance may not be absolute: for any dilogical structure we could in principle incorporate the context into the source as an exception case, so as to produce a unitary but more complex rule or algorithm. However, in Wittgenstein's terms, such a 'superlative fact' is always open to 'surprises' which fall outside its scope. And given this, the attempt to explain autism in terms of inadequate 'theory of mind', like Socrates' attempt to explain judgement in terms of adequate definitions, is an enterprise which looks for the right thing in the wrong place.

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