

# Empathy

## Freudian origins and 21st-century neuroscience

**E**MPATHY has been a central focus of my research over the last 20 years. In my early work, I considered just one 'fraction' of empathy, namely 'theory of mind' (ToM), or the ability to attribute mental states (desires, intentions, beliefs, knowledge, emotions) to oneself or others, as a means of making sense of human action and predicting it. Some consider ToM to be the *cognitive* component in empathy. Recently, I have looked more at the  *affective* component, namely having an appropriate affective response to another person's mental state.

My view is that empathy is among the most important of human characteristics, since it enables not just social relationships (Dennett, 1978) and communication (Grice, 1975), but is a major basis for our moral code and for the inhibition of aggression. And whilst empathy may have some simpler equivalents in non-human



**SIMON BARON-COHEN** on Freud's place in present and future research.

species (de Waal, 2003), its remarkable flowering in the human case is unique.

It is rare in the literature on either ToM or empathy to see citations to Freud, but my view is that this reflects a lack of contact between two traditions. ToM has been studied within cognitive science, and in recent years cognitive neuroscience, but theoretical ideas on the ability to empathise (and particularly the capacity for affective empathy) do stem from Freud's ideas.

We can trace Freud's influence within the developmental psychology of empathy to the work of Daniel Stern, who described in exquisite detail the interactional synchrony between mother and infant as the social basis for 'inter-subjectivity' (Stern, 1977). Stern's account mirrors that given by Colwyn Trevarthen, though in Trevarthen's case there is a less explicit link to psychoanalytic ideas (Trevarthen, 1979). Both theorists emphasise the fundamental importance of the infant's first emotional attachment to a caregiver as a prerequisite for a later healthy capacity to empathise. This is a quintessentially Freudian tenet.

And having used that key word – attachment – we can also trace Freud's influence within the psychiatry of empathy disorders to the work of John Bowlby. He described children who experienced no early continuity from a caregiver, or who experienced early neglect and abuse, and who went on to develop shallow emotional relationships and an inability to empathise with others. This stresses the importance of our earliest emotional attachment in the development of healthy empathy, and in Bowlby's case the link with Freudian theory was explicitly acknowledged.

Today, 21st century neuroscience has 'discovered' empathy as a research topic, recognising its central importance, and is delivering a wealth of new findings. We are uncovering not just the brain basis of empathy in a network that includes the amygdala and orbito-frontal cortex (e.g.

Baron-Cohen *et al.*, 1999; Stone *et al.*, 1998), medial-frontal cortex (Frith & Frith, 2003), and 'mirror-neurons' (Singer *et al.*, 2006), but also the role that genes may play in individual differences in empathy (Chakrabarti *et al.*, 2006; Skuse *et al.*, 1997) and that foetal testosterone has in shaping sex differences in empathy (Baron-Cohen, 2002; Knickmeyer *et al.*, 2005, 2006).

These are exciting new applications of science that Freud may never have dreamed would be possible, but which today – using technologies that include fMRI, amniocentesis, and genomics – are now available to us. I like to think that had Freud been alive today, he would have been open-minded enough to acknowledge an additional contribution to empathy from biology, over and above the major contribution that our early experience of attachment to a caregiver.

It is not just out of respect for the history of ideas that we should acknowledge Freud's contributions. Here I present a novel example of a prediction that arises from his theories which 21st century neuroscience could exploit. We are familiar with how the conditions of autism and Asperger Syndrome can, for genetic reasons, lead to difficulties in empathy (e.g. Baron-Cohen & Wheelwright, 2004) through altered brain function and structure (Baron-Cohen *et al.*, 2000; Dapretto *et al.*, 2006). Might there be a different, novel condition that Freud predicted should also disrupt empathy, that we could study?

One of Freud's ideas was that whom we are attracted to as adults depends on whether we successfully passed through each phase in our psychosexual development. If we were stopped from progressing through one, we end up in relationships that reflect our compulsive attempts to resolve unfinished challenges from that particular childhood phase. What if modern neuroscience took seriously Freud's Oedipal theory: that between the ages of three and five, boys fall in love with

### FREUD AS PRE-SCIENCE

It has become fashionable to teach Freudian theory as an illustration of the absurd, old-fashioned, pre-scientific ideas that predate the development of modern cognitive neuroscience. It is easy to set up Freud as belonging to an irrelevant period of the history of psychology, before the days when we understood the importance of hypothesis-testing, data-collection, experimental control, and large sample sizes. But this is, in my opinion, too superficial a view of Freud.

True, he did not conduct group studies and apply statistical tests to confirm or refute predictions. His methodology was not borrowed from the natural sciences in the way that his contemporaries in experimental psychology were adopting. Rather, his methodology was the in-depth analysis of single-cases, raising concerns about the generalisability of any findings. But despite this concern, to my mind, if his analysis of just half a dozen single-case studies reveals a pattern that might reflect a human universal, this is as valuable as larger-scale surveys or carefully designed experiments conducted in a well-controlled manner. Darwin's finches on the Galapagos might have been equally unrepresentative as a population survey by stringent epidemiological standards, but the ideas generated by his observations gave rise to the major theory in biology today. Both types of methodology have their place, and it is altogether too easy to dismiss the Freudian approach as pre-scientific.

their mothers and girls with their fathers? As far as I am aware, 21st-century clinical and developmental psychology, or indeed neuroscience, has completely ignored this potentially important observation.

Stripping aside the non-essential details of Freud's account, his central claim has a ring of truth about it. According to Freud, most children deal with the heartbreak that their opposite-sex parent is unavailable, and go on to form healthy intimate adult relationships with a peer. For Freud, the Oedipal struggle forms part of normal development, but failure to resolve it leads to a fixation within the Oedipus complex. Freud's theory predicts serious problems in such individuals' partner choice later in life.

The Oedipus complex was a popular idea in the 1970s but fell into disrepute with feminists (who rightly criticised Freud's theory for being phallogocentric, and even sexist in his portrait of the Electra complex, Jung's name for Freud's concept of the feminine Oedipus complex). But this striking psychological condition may well be real, even if Freud was wrong in some details. If so, it's our duty to study it.

Let us take one of his central claims: that there are people who were 'arrested' at this important stage in their development. According to Freud, one of the causes of an arrest in the Oedipus complex is the presence of an extremely unaffectionate same-sex parent, enabling the child to hold on to the fantasy that they (the child) have an exclusive attachment with the opposite-sex parent. Such children continue to

idealise their opposite-sex parent, despise their same-sex parent, and in adulthood may desire a married person of the opposite sex as a sexual partner. Such relationships are driven by a compulsion to break attachments.

So, the question: is this just a fantastical tale, real only in Freud's imagination? Sophocles' play *Oedipus Rex* is a masterpiece of dramatic tragedy, but no matter how gripping the drama, by itself it is no basis for a scientific theory about the nature of psychological development. But is it just possible that this is more than a metaphor from Sophocles, and that such people really do exist? Here is a postulated phenomenon which clinical neuroscience has not really tested. Is this an identifiable clinical phenomenon?

If so, does this throw light on some of the universal stages through which all children must pass, en route to being able to form healthy adult attachments? And if the Oedipus complex exists, what are the consequences for empathy, as the individual is driven by an inner compulsion that will stop at nothing to satisfy their childhood need?

I can think of a few methods that would be interesting to try to test Freud's idea. First, one could take teenagers with the presumed psychological profile (idealising the opposite-sex parent whilst despising the same-sex parent) and look at whether they seek to detach someone of the opposite sex from their attachments during their later adult relationships. Having established if such a profile exists and if it leads to this specific outcome, one could screen teenagers to estimate its prevalence among each sex. Third, having found a cohort of such individuals, one could test the very Freudian idea that this is a compulsion: is there a pattern of being attracted to someone who is already attached to someone else, as a repeating theme in this individual's life? Fourth, one could test such individuals with the Empathy Quotient (EQ) (Baron-Cohen & Wheelwright, 2004) and related instruments, to see if their compulsion is blunting their empathy. Finally, one could test the Freudian claim that a factor in the development of a fixation within the Oedipus complex is in the unhealthy combination of a too-close child-opposite-

sex parent relationship alongside a too-distant child-same-sex parent relationship.

These are deeply interesting questions about what Freud called 'the archaeology of the mind'. Freud's influences may not just be on today's neuroscience, but on the neuroscience of the future.

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