UNIVERSITY OF CAMBRIDGE

TAKE YOUR PLACE

Activity 1: How to communicate with babies

Before we learn anything about how babies think, let's discuss how psychologists can even communicate with infants. Imagine you want to test if a three-month old baby understands the concept of maths. You design a neat experiment to test this claim – but there's a problem. The baby might be able to count (that's what you're trying to find out), but they can't tell you what the answer is verbally. They can't point at the answer, they can't choose an answer, they can't read, they can't click a button.
Can they communicate with us at all? It turns out that yes, they can!

Fig. 1: Can very young infants even communicate with us? Although they can't speak, point or press buttons, their gaze is very revealing!
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I will now introduce a few key terms which will come in handy. The first one is **habituation**, which means you become used to something. For example, you're habituated to the feeling of your clothes touching your skin – you aren't really conscious that clothes are touching your body, until you start to actively think about that. That's because they've been touching you for such a long time, your brain got 'bored' and started to ignore these signals. Only when a new piece of clothing starts touching you (e.g. a scarf), you start to notice how it feels against your skin.

Psychologists use habituation to test whether babies can detect changes in their environment. In one study, researchers wanted to see if babies would be able to tell apart monkey faces. They showed the same monkey face repeatedly to infants, who were intrigued by the image in the first instance. After a while, they got bored of looking at the same picture, and so did not spend as much time looking at it. Then, a new monkey face was shown to them – now, the babies started looking more carefully at the image, suggesting that they realised the picture was different and they showed renewed interest in the photograph. By the way, young babies were much better at this task than adults!

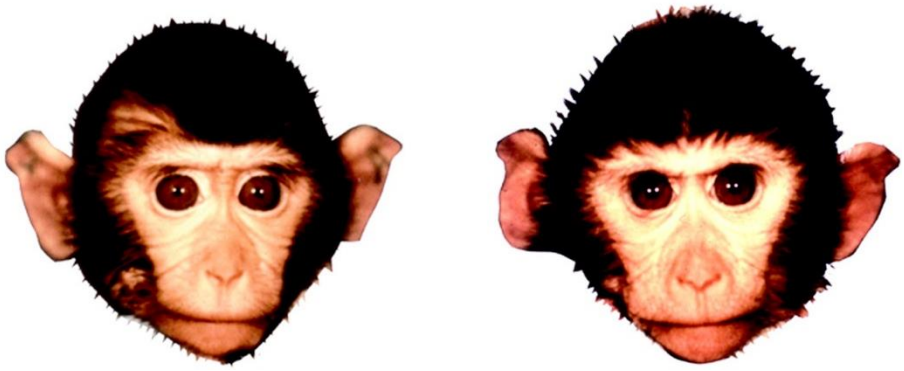

Fig. 2: Are these monkey faces the same or different? 6-month-old infants could do this task better than adults! (Pascalis, de Haan & Nelson, 2002). If the babies thought the second monkey was different they would spend more time looking at it.

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Another key term which we'll need is **violation of expectations**. As the name suggests, it's a reaction to something which does not occur in the way we thought it would occur. For example, if you threw a brick on the ground and it started levitating, instead of falling to the ground, your expectations would be violated (that would be a strange sight indeed). Babies react to violated expectations by looking significantly longer at the surprising event.

We can use this method to assess whether babies were expecting certain things to happen. Did they expect an object to fall to the ground? Did they expect a person to perform a certain action? We will discuss studies which have used this technique in the next activity.

Fig. 3: Do babies have expectations about the world? If they do, then breaking these expectations would surprise them (like it would surprise you to see a flying brick!).

Task

1. **Psychologists measure infants' gaze to gather evidence for their studies. Come up with a method which could be used to measure how long an infant looks at something (What equipment would you need? Outline all the steps you would need to take).**

2. **Do you think it is worthwhile to study what infants might be thinking/expecting? Why / why not?**