

Justifying Bateson and Laland

At first sight, it seems very easy to justify that Tinbergen's four questions can be applied to non-living or even semi-living systems. For instance, Bateson and Laland give an example of traffic lights and were able to answer them with the four questions, how it was assembled, how its design evolved, how its chance of survival increased, And how they work? However, these analyses should only explain - as Tinbergen states - animal behaviour and must include evolutionary explanations (Tinbergen, 1963). Otherwise, it is not a logical approach to studying ethology that is particularly useful for in-depth analysis. (Applied Animal Behaviour Science, 2012) Which in this case seems not to be a legitimate answer.

Furthermore, Tinbergen core insight is that his questions are not alternatives, but are complementary. An answer to all four questions is necessary for a complete biological explanation. Nonetheless, Nesse debates that some parts of these questions like 'survival value' seem outdated because we are quite confident of reproductive success and favours 'adaptive significance'. Nevertheless, Bateson and Laland prefer 'current utility' because this does misleadingly implies that functionality results from a biological evolutionary process (Nesse, 2013).

Another way to give us insight if we can apply Tinbergen's four questions is by broadening the cultural context and look at another interesting aspect called 'semi-living systems'. For example, will future movable prosthetic devices be regarded as alive as a component of its wearer? How do we differ a bio-machine tool like a tissue-engineered prosthetic arm as more alive than the healing of a wound with the help of a metal rod, wires, or plates and screws? (Rubernson, 2015). Treating these semi-living systems as living systems evokes a sense of vitality that these systems may indeed heighten the perception of life. Arguably, this is similar for non-human or entities because an essential characteristic like 'movement' affects humans' affinity towards non-living systems (Wolf & Wiggins, 2020).

Another thing is the suggestion that a fifth element should be added to Tinbergen four, namely 'Of what is an animal aware?' (Bateson & Laland, 2013). This comes from the growing interest in animal awareness as we tend to humanise animals and dispute animal suffering or welfare (Wynne, 2004). Nevertheless, there seems no evidence - despite several reasonable attempts – that animals like chimpanzees understand false belief. (Call & Tomasello, 2008) However, they understand others' goals and intentions. Call & Tomasello conclude that these animals understand some form of perception as opposed to human belief psychology. Moreover, the lack of proper scientific evidence of animal cognitive behaviour leaves us to wonder if we, as an observer, do not have too many feelings of superiority towards these animals (Allen, 2006).

All in all, it is not easy to justify that Tinbergen's four questions can be applied to non-living systems. Tinbergen wanted an evolutionary explanation of a trait form and its variations in previous generations due to past environments (Nesse, 2013). Even if some parts of the four questions are outdated, answering it with an example of semi-living systems helps give it another insight. Furthermore, the suggestion of adding a fifth question 'of what is an animal aware?' undoubtedly helps researchers with the complex progress of animal behaviour but could also be seen as too much anthropomorphism.

References

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