Critically assess the claim that language is a human species–specific behaviour

Language, according to Brown (1965), is a set of arbitrary symbols, 'Which taken together, make it possible for a creature with limited powers of discrimination and a limited memory to transmit and understand an infinite variety of messages and to do this in spite of noise and distraction.'

While most other species are able to communicate with each other, they do so only in limited ways. Perhaps it's the 'infinite variety of messages' part of Brown's definition that sets humans apart from non-humans. For example, wild chimpanzees use over 30 different vocalisations to convey a large number of meanings, and repeat sounds in order to intensify the meaning. However, unlike humans, chimpanzees fail to string these sounds together to make new 'words' (Calvin, 1994).

The claim that chimpanzees are capable of using language is based largely on deliberate training. However, human language is mastered spontaneously within the first five years of life. Brown (1973) again points out that humans don't simply learn a repertoire of sentences but instead 'Acquire a rule system that makes it possible to generate a literally infinite variety of sentences, most of them never heard from anyone else.'

So, do non-human species have the capacity to acquire and use a human language? The obvious way to answer this question is to try to teach a non-human species a human language. However, in order to test whether or not language has been acquired we need first to define language as a set of measurable criteria.

Aitchison (1983; based on Hockett, 1960) proposed ten such criteria. These criteria are: the use of vocal–auditory channel, arbitrariness, cultural transmission, spontaneous usage, turn-taking and duality. Aitchison also suggested a further four criteria which she suggested were unique to language in humans, these were: displacement, semanticity, structure dependence and creativity.

Chimpanzees and other primates have proven to be popular candidates in the quest to teach non-human species a human language, although many early attempts were almost totally unsuccessful. Kellogg & Kellogg (1933) attempted to raise a chimp, Gua, alongside their own child, and although Gua came to understand 70 words or commands, she failed to utter a single word. It became obvious that the vocal apparatus of a chimp is not suitable to make English speech sounds. However, this doesn't rule out the possibility that chimps and other primates may still be capable of learning language in some non-spoken form.

The idea that chimps may be able to acquire a non-spoken human language led researchers to create a teaching programme known as production-based training. A popular choice for the non-spoken language was American Sign Language (ASL), as it still fulfils all of Aitchison's criteria for language. Gardner & Gardner (1969) famously tried to teach ASL to a female chimpanzee called Washoe. Other choices for language also included the use of small plastic symbols (Premack, 1971) and special typewriters controlled by a computer displaying geometric patterns, known as lexigrams, which represent words (Rumbaugh *et al*., 1977; Savage-Rumbaugh *et al*., 1980).

However, these production-based training studies found that, compared with children, chimps showed little spontaneous naming of objects, and they seem to use symbols in a purely instrumental way.

These production-based training studies primarily use operant conditioning, the shaping and selective reinforcement of signs/words, as a method of teaching language. However, it can be argued that operant conditioning does not explain the culturally universal sequences in the stages of language development, and fails to explain the creativity of language. Also parents, while reinforcing some early babbling, do not reinforce every sound, word or sentence their child makes. Therefore it can be argued, as indeed Chomsky did, that human children do not acquire language through operant conditioning, but are innately equipped with a language acquisition device (LAD). Therefore, is it possible to accurately compare language acquisition in human and non-human species if the non-human species have not acquired their language in the same way as humans?

Since the 1980s, Savage-Rumbaugh has been using a comprehension-based approach, with Kanzi and other bonobos. This method structures the environment in a way that allows the chimp to acquire language through observational learning, much like a child, by exposing it to language in the course of routines in daily life. This had the effect of allowing Kanzi to learn many vocal symbols as well as to acquire an extensive vocabulary of 200 lexigrams. According to Rumbaugh (1990), chimps learn where one word ends and the next begins, that is, what the units are, through the learning of routines which emerge out of daily life that has been constructed for the chimpanzees. Data from studies involving Kanzi, other bonobos and common chimps, suggest that there's only a qualitative difference between ape and human language, and the earlier, rejected, claim that chimps are not capable of acquiring and using human language was the result of findings from the earlier production-based studies.

According to Aitchison (1983), the apparent ease with which children acquire language, compared with apes, supports the suggestion that they're innately programmed to do so. Similarly, although these chimps have grasped some of the rudiments of human language, what they've learned and the speed at which they learn it, is qualitatively different from those of human beings (Carroll, 1986). Hence, opinions are still divided over whether human language remains unique to humans.