

### **Wolfgang Köhler (1887–1967)**

Köhler (1947) proposed that the behaviorist holds that physicists, in making their observations, deal with an objective reality. Knowledge of physics, he pointed out, is composed entirely of observations and its concepts are derived from direct experience. Furthermore, the exactness of the definitions in physics is not due to any independence from direct experience; such independence does not exist. In Köhler's assessment, the behaviorist was largely uninterested in things that are epistemological. The behaviorist was, however, aware of the problem of how any other person's direct experience could be known. Since there would never be anything definite it could be dismissed. What the behaviorist had missed in this, however, was that it is just as difficult to prove the existence of the physical world.

In dealing with the transition from biological evolution to cultural evolution, Vygotsky and Luria (1930/1993) were particularly influenced by the work of Köhler (1925/1957) on chimpanzees and their ability to solve complex problems. In his research Köhler confronted chimpanzees with problem situations and noted how they went about resolving the difficulty. The common belief, as reflected in the research of Thorndike (1898) with cats and dogs in puzzle boxes, was that learning was a gradual process based upon the association of behaviors with their consequences (Köhler, 1925/1957). This was a trial and error adjustment that bore no evidence of problem solving through reason. To Vygotsky and Luria (1930/1993) this reflected the creation of a conditional reflex that involved the gradual elimination of ineffective behaviors, a decrease in the number of mistakes after each performance, until the decrease, by degrees, approaches zero. The creeping instantiation of an adjusted conditional reflex was not what became apparent in the successes of the apes.

With the ape (chimpanzee more correctly), this creeping, progressive correction through trial and error was not observed. There was either no hint of a solution or there was a sudden shift to a solution, which was indicative of *insight* (which is just what the associationist approach was denying).

Association theorists know and recognize what one calls insight in man, and contend that they can explain this by their principles just as well as the simplest association (or reproduction) by contiguity. The only thing that follows for animal behavior is that, where it has an intelligent character, they will treat it in the same way; but not at all

that the animal lacks that which is usually called insight in man. (Köhler, 1925/1957, pp. 188–189)

Thorndike's experimental conditions, according to Köhler, were designed such that all of the conditions necessary to successful egress from captivity could not be perceived and that, therefore, the animal was at a disadvantage and could not display its true, natural intelligence. Such conditions forced learning to reflect the gradual acquisition without insight. This was not what emerged from Köhler's research with chimpanzees (in fairness, Thorndike did admit that he expected something different, by way of performance from primates). The failure of Köhler's chimpanzees to solve the problem was followed by the sudden emergence of a resolution and that was taken to be clear evidence of intelligence. Vygotsky and Luria were eager to emphasize that.

Köhler's findings were evidence of a wholly different psychological capacity, a form of mentation, or act of mind, that Vygotsky and Luria (1930/1993) called intellect. Not only did the solution appear suddenly, that solution was retained without any further training, but, furthermore, the solution could be readily transferred to situations that were vastly different perceptually. Generalization of solutions was successful despite a lack of congruence between subsequent problem situations and the learning situation. The ape discoveries indicated an independence from the concrete conditions of the invented behavior (the novel solution). In some problems they had to construct some sort of rudimentary tool in order to achieve solution. They constructed a climbing apparatus by stacking boxes or a lengthened their range of reach by inserting a stick into an opening in another, constructing a much longer-reaching device. These were not trial and error accidents. The apes discovered and they invented. They adapted to unfamiliar circumstances by way of operations to which already established instinctive performances were attached, or to those that were conditionally established.

The apes could clearly think, as their problem solving demonstrated (perhaps suggested is a more appropriate expression, since it was inferred), but such thinking was independent of speech in these animals (Vygotsky and Luria, 1930/1993). This was an important finding with respect to an appreciation of the history behind the development of speech. It was in this regard, in particular, that apes differed from humans. An absence of even the rudiments of speech was indicative that there was an incapacity to form a sign or develop and interpose any auxiliary, psychological mechanisms; there was as yet no culture.

## References

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