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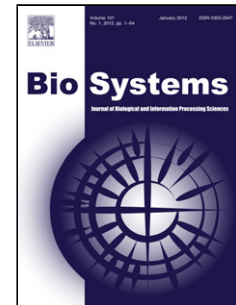
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## The search image as link between sensation, perception and action

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### Abstract

In this paper, it is argued that Jakob von Uexküll's "search image" notion, the original version of this notion within ethology, is still of use. A search image, in Uexküll's sense, is an imagined object that an organism has in mind when it searches for something. Uexküll's conception of the search image is useful both for understanding the theoretical context of contemporary notions of search images, and with an eye to envisioning possible future developments of the idea. Uexküll's classical notion differs from contemporary versions in that it has a wider application, and is therefore of greater relevance to theoretical biology and cognitive science. It constituted an integral part of his ground-breaking Umwelt theory, stressing the fundamental plasticity of the Umwelt, the subjective lifeworld of an animal or human subject. In a contemporary development of Umwelt theory, expressed by the *tripartite Umwelt model*, the search image notion represents a key connection between the directly experienced core Umwelt and the mediated Umwelt. However, the key function that schemata have in cognitive processes is also the starting point for mistakes in perception. This article details both the constructive function search images have in animal and human perception, and the mismatches in perception they can lead to. It also explains how the existence of search images can help explain puzzles concerning subjective and neural time in contemporary cognitive science.

*Keywords:* search image, Umwelt, perception, cognitive science, Jakob von Uexküll, schema

### 1. Introduction

As part of his Umwelt theory, a theory on the subjective, experiential worlds of animals, the Baltic-German biologist Jakob von Uexküll (1864–1944) introduced the notion of the *search image* (*Suchbild*) (Uexküll 2010: 113–118, cf. Uexküll 2010 [1934]: 83–87). In this view, a search image is an imagined object that an animal or a human being has in mind as it searches for something.

The search image plays a central role in what I have termed *the mediated Umwelt*, the aspect of the Umwelt in which Umwelt objects are encountered indirectly by way of some mediation (e.g. memory, fantasy, anticipation). This is one of three aspects, or layers, of the Umwelt according to the *tripartite Umwelt model* (Tønnessen 2011b, 2014, 2015b) (cf. section 2). The search image is generally related to an animal's agenda- or interest-driven matching of something it is searching for with something in its environment. Such searches typically originate in the subject's *Innenwelt*, i.e. its sphere of experiences of its own body. Animals need search images to navigate in their environment, to pursue some of their biological needs, and to direct attention to their immediate or prioritised needs. Search images are also key to understanding how perception works as distinguished from sensation, and how an animal's perception and action are connected.

In addition to contributing to a proper understanding of how sensation, perception and action are linked, studies into the phenomenon of search images can shed light on some present

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