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Titolo	How Humans Recognize Objects: Segmentation, Categorization and Individual Identification
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Sommario/riassunto	<p>Human beings experience a world of objects: bounded entities that occupy space and persist through time. Our actions are directed toward objects, and our language describes objects. We categorize objects into kinds that have different typical properties and behaviors. We regard some kinds of objects – each other, for example – as animate agents capable of independent experience and action, while we regard other kinds of objects as inert. We re-identify objects, immediately and without conscious deliberation, after days or even years of non-observation, and often following changes in the features, locations, or contexts of the objects being re-identified. Comparative, developmental and adult observations using a variety of approaches and methods have yielded a detailed understanding of object detection and recognition by the visual system and an advancing understanding of haptic and auditory information processing. Many fundamental questions, however, remain unanswered. What, for example, physically constitutes an “object”? How do specific, classically-characterizable object boundaries emerge from the physical dynamics described by quantum theory, and can this emergence process be described independently of any assumptions regarding the perceptual capabilities of observers? How are visual motion and feature information combined to create object information? How are the object trajectories that indicate persistence to human observers implemented, and how are these trajectory representations bound to feature representations?</p>

How, for example, are point-light walkers recognized as single objects? How are conflicts between trajectory-driven and feature-driven identifications of objects resolved, for example in multiple-object tracking situations? Are there separate “what” and “where” processing streams for haptic and auditory perception? Are there haptic and/or auditory equivalents of the visual object file? Are there equivalents of the visual object token? How are object-identification conflicts between different perceptual systems resolved? Is the common assumption that “persistent object” is a fundamental innate category justified? How does the ability to identify and categorize objects relate to the ability to name and describe them using language? How are features that an individual object had in the past but does not have currently represented? How are categorical constraints on how objects move or act represented, and how do such constraints influence categorization and the re-identification of individuals? How do human beings re-identify objects, including each other, as persistent individuals across changes in location, context and features, even after gaps in observation lasting months or years? How do human capabilities for object categorization and re-identification over time relate to those of other species, and how do human infants develop these capabilities? What can modeling approaches such as cognitive robotics tell us about the answers to these questions? Primary research reports, reviews, and hypothesis and theory papers addressing questions relevant to the understanding of perceptual object segmentation, categorization and individual identification at any scale and from any experimental or modeling perspective are solicited for this Research Topic. Papers that review particular sets of issues from multiple disciplinary perspectives or that advance integrative hypotheses or models that take data from multiple experimental approaches into account are especially encouraged.

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