OVERVIEW

› The ABC of Kuhn’s account
› Kind terms and lexicons/taxonomies
› Exploratory experimentation
› Ontological knowledge and knowledge of regularities
› A case of conceptual development

› Extending Kuhn’s account
› Distributed cognition
› Interconnected frames

› Frame analysis of interdisciplinarity, collaboration and distributed cognition
› Trading zones, boundary objects, interactional expertise
THE ABC OF KUHN’S ACCOUNT

› Kuhn’s account of kind terms

› lexicon as a “general sort of categorization module”

“... two individuals who classify in the same way need share only lexical structure, not the features used to implement it”

To each node ... is attached ... a set of features useful for distinguishing among creatures.”
THE ABC OF KUHN’S ACCOUNT

› “No need for necessary and sufficient conditions”
› “… two individuals who classify in the same way need share only lexical structure, not the features used to implement it”
› To each node … is attached … a set of features useful for distinguishing among creatures”
THE ABC OF KUHN’S ACCOUNT

› Buchwald
  › experimental work divides the elements of the [taxonomic] tree from one another: sitting at the nodes or branch-points of the tree, experimental devices assign something to this or that category
  › A novel taxonomy may emerge as someone attempts to grapple with a particular device
› Chen
  › instruments practically designate concepts in a lexical taxonomy by sorting their referents under different categories

Knowledge in Kuhn’s account

› Certain sorts of expectation about the world are embedded in [the lexicon]
  › all sorts of phenomena...are compatible with the structure of a particular lexicon. But...still other phenomena can’t be fitted, and some of these turn up unexpectedly during historical development
  › No two kind terms, no two terms with the kind label, may overlap in their referents unless they are related as species to genus. There are no dogs that are also cats, no gold rings that are also silver rings, and so on; that’s what makes dogs, cats, silver, and gold each a kind
  › if the members of a language community encounter a dog that’s also a cat (or, more realistically, a creature like the duck-billed platypus) they cannot just enrich the set of category terms but must instead redesign a part of the taxonomy
THE ABC OF KUHN’S ACCOUNT

› Quasi-ontological knowledge
› Knowledge of regularities

› Extension to Kuhn’s account
  › Theoretical explanations of feature correlations

› Distributed expertise
  › Recursiveness and other connections between frames
THE ABC OF KUHN’S ACCOUNT

› What members of a language community share is homology of lexical structure. Their criteria need not be the same, for those they can learn from each other as needed. But their taxonomic structures must match, for where structure is different, the world is different, language is private, and communication ceases until one party acquires the language of the other

› Kuhn 1983: Commensurability, Comparatibility, Communicability

› … two individuals share lexical structure if the relative distances between nodes and the hierarchical arrangement of nodes is the same for each. On this view, it’s shared structure, but not shared features, that yields shared taxonomy and that is thus prerequisite to full translatability

› Kuhn 1990 (MS): An Historian’s Theory of Meaning

THE ABC OF KUHN’S ACCOUNT

› … what makes these specialties distinct, what keeps them apart and leaves the ground between them as apparently empty space. To that the answer is incommensurability, a growing conceptual disparity between the tools deployed in the two specialties. Once the two specialties have grown apart, that disparity makes it impossible for the practitioners of one to communicate fully with the practitioners of the other. And those communication problems reduce … the likelihood that the two will produce fertile offspring

› Kuhn 1991: The Trouble with the Historical Philosophy of Science

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EXTENDING THE ACCOUNT

› Interconnected frames
› Recursiveness
› Conceptual bridges

Trading partners can hammer out a local coordination, despite vast global differences. In an even more sophisticated way, cultures in interaction frequently establish contact languages, systems of discourse that can vary from the most function-specific jargons, through semispecific pidgins to full-fledged creoles rich enough to support activities as complex as poetry and metalinguistic reflection (Galison 1997)

Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use and become strongly structured in individual use. These objects may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation (Star & Greisemer 1989)
NEW DIRECTIONS

› Frames and distributed cognition
  › Recursive frames and the contributory/interactional expertise divide
  › Linked frames and trading zones/boundary objects
THANK YOU FOR YOUR ATTENTION

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