From Task to Interaction:
What the User Must Know

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Abstract: The principal behavioral unit in human-computer interaction is the *method* (or procedure), which links the user's *task* to the *interactions* that he must have with the system in order to accomplish the task.   Analyzing an interactive computer system from the point of view of the methods it requires of its users allows us to not only predict how well expert users can use the system, but also how easily learnable the system is for the novice.   But there are ways other than knowing a method for a user to go from his task to appropriate interactions, such as problem solving in a mental model of the system or working from examples by analogy.   A taxonomy of the types of knowledge (representations and processes) available to a user can be organized in the form of a graph connecting tasks and interactions.   An analysis of the topology of this graph reveals bottlenecks and dependencies in the different kinds of knowledge types, which has strong implications for the design of the user interfaces of systems.