(Is it quick enough? Is it economical? Is it environmentally OK?). If none of the coffee machines we can think of will satisfy the criteria, we might need to start considering other ways of creating the energy rush.

To sum up: this comparison establishes the design professions as thinking fundamentally differently from fields that are predominantly based on analysis (deduction, induction) and problem-solving (normal abduction). But this distinction is not as clear-cut as it may seem from this logical analysis. In the real world, design practices involve a mix of different kinds of thinking—including inductive and deductive reasoning and normal abduction—that are the fundamental building blocks of conventional problem-solving. But there is a real fundamental difference, too—the nature of design abduction that sets the design practice apart from those of other disciplines. The heart of the distinction between design and conventional problem-solving can be illustrated by comparing two problem situations (Hatchuel 2002). Picture a group of friends on a Saturday night. The first problem situation is that they are "looking for a good movie to see," and the other scenario is that they set out to "have a good time." Hatchuel argues that the first situation can be dealt with through conventional problem-solving, but that the second requires design abduction. He lists three important differences between these situations. The first difference is that the design abduction situation includes the expansion of a key concept by which the situation was initially framed ("a good time"). This reasoning process requires a design process instead of a one-off choice of which movie to go to, from a limited set of alternatives (the movies that are playing that evening). There is no dominant design for what a "good time" would be, so imagination is needed to arrive at a definition. A second difference is that the design situation requires the design and use of "learning devices" to reach a solution. These "learning devices" include (thought) experiments and simulation techniques, in this case imagining different scenarios for going out. Third, designing the understanding and creation of social interactions is part of the design process itself. The group of friends needs to develop a way to imagine a solution, to share this view with one another, to judge the solution, and to decide which way to go (and experience shows that this process is not always easy). The process that these friends are going through undoubtedly includes stretches of conventional problem-solving, but it also contains these other "design" elements.