Defining Intelligence

1. “Artificial General Intelligence” ought to mean something specific, useful, and testable.
2. In order to define AGI, we ought to define general intelligence
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4. In order to define intelligence, we could propose a ‘minimum viable intelligence’ and determine what makes that minimum viable intelligence, intelligent.
5. I propose a cell, the “basic unit of life”, as the candidate minimum viable intelligence.
6. The reason we could consider a cell intelligent is because it is able to adapt to its environment in order to achieve what could be perceived as its goals (i.e. survival, reproduction, tissue creation, etc.)
7. Given #6, we can say that problem solving and goal completion is at the heart of intelligence.
8. **I propose that pattern recognition is at the heart of problem solving.**
9. Association between perceptions and the environment could be reframed and described as a pattern (relational).
10. Plans to act in an environment in order to change it in a predictable manner could be reframed and described as a pattern (causal).
11. All inference-based perception and action can then be reinterpreted as recognizing patterns.
12. Given #8-11, I propose that the definition of intelligence we use is **the ability to recognize and apply patterns in order to solve problems/achieve goals.**
13. Problems and goals rely on an environment, whether physical or conceptual.
14. Measuring intelligence therefore needs to be in the context of an agent’s possible goals and environment (i.e. we cannot call a cell ‘dumb’ because it doesn’t know how to bake a cake. That is beyond the scope of its problem-space. We need to judge its intelligence on the basis of how well it can adapt in its own problem space.)
15. We say that an agent’s intelligence is high on the basis of how well it can solve problems in its problem space (environment and scale/concern)
16. We say that an agent’s intelligence is complex on the basis of how complicated their problem space is in scope and environment.
17. When judging intelligence in AI, **we are to assume that their problem space is the same or relative to ours.** I believe that this is the most useful scenario, because we want to know how intelligent AIs are in relation to us.
18. Specific or narrow intelligence can be defined as the ability to recognize and apply patterns in order to solve problems that are narrow in scope.

19. General Intelligence, then, is the definition given at #12, applied to a wide variety of human-oriented problem domains.
20. **The distinction between narrow and general intelligence only makes sense in the context of AI.** Once again, this is because we should judge AI's intelligence using humanity's problem space. **Calling anything other than AI narrowly intelligent does not make sense. All living intelligent systems are generally intelligent.**