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An information paradigm is presented, as a new vision of physical reality and conscious experience. The theory is based on multi-agent model and there information states (relations). A mathematical model is presented, as a strong support for the theory, which is extended from theory of graphs to theory of groups. A self-originated state of tacit knowledge of itself or other, and indirect knowledge of itself or other is presented, as well as states of conscious of units of matter-all merged into a single state of conscious what appears to be a physical universe. Some basic physical phenomenon are also presented, which contribute in 'baby' universe structures. One interesting applications of the model is chosen for a presentation: the chronology of the events of the early universe in comparison with the GUT. **P3**

121 Artificial Self Based on Collective Mind - Using Common Sense and Emotions Web-Mining for Ethically Correct Behaviors *Rafal Rzepka, Kenji Arak*i <kabura@media.eng.hokudai.ac.jp> (Graduate School of Information, Hokkaido University, Sapporo, Hokkaido, Japan)

Our idea is to combine knowledge retrieved from the Internet to acquire common human behavior patterns in order to achieve an algorithm for ethical machines. We propose a method using causal and affective information extraction to calculate Bentham's felicific calculus to make a machine reason about its own and users' actions. Depending on actors, places and objects the values change heavily what makes it a very difficult task to compute. However, the constantly growing Internet gives us an opportunity to find similar situations / actions and their consequences. In case where most people find it unethical, the machine uses this "democratic" data to change its own actions or suggest user to change her or his behaviors. For instance if a robot knows that the user is hungry (negative state) it can propose an action of feeding the user but it also knows that it should not steal the food as this is a negative behavior for the most of people. In our opinion this allows to implement an universal algorithm depending on a culture (or rather cultures using one language) which is independent of sophisticated philosophical theories and reminds children's ethical behavior development based on numerous examples from the real world. Such a utilitarian approach as ours is surely discussable but we think it can become a system which has ability to behave more freely without becoming dangerous. **C8**

122 Robot Dreams: Requirements for Synthetic Phenomenology and Intersubjectivity *Robin Zebrowski* <zebrowsr@beloit.edu> (Cognitive Science, Beloit College, Beloit, WI)

In spite of both the hopeful proclamations of Alan Turing and the apparent faith in the future of technology by many working in the field of Artificial Intelligence (AI) even now, the methodological approaches found in primary AI research have failed to produce great successes beyond theories about what the future holds. Philosophically, the goal is still to build a mind, and not just the appearance of a mind. Given this assumption, I undertake an examination of a more authentic approach to building AI with the goal of creating a being with actual experiences (what we might rightly call phenomenology) that we can recognize as authentic and engage with intersubjectively. To talk about any other sort of AI is to concede the weak position of simulation rather than creation. To solve this problem, we first must recognize the psychological fallacy: that something-for-us is not the same as something-for-the-machine. For example, cameras for eyes may turn out to be the wrong starting point altogether for information-gathering purposes. We are trying to get something fundamentally different from us to have experiences of a sort comparable to our own. Rather than a piece-meal functionalism, we must ask how something made of a different material entirely best interacts with the richness of the world. As humans, we see cameras as the obvious analog of vision for a machine, but the machine needs to be able to break down information that is useful for it, without regard for us as observers. We must concede, given the current state of neuroscientific research on embodiment (Damasio, Gallese), that a physical body is not a luxury, but a necessary starting point for a successful AI program. The question remains – what sort of body? Given the theoretical work in concept acquisition by Lakoff and Johnson, as well as its recent endorsement by Pinker, it seems hard to avoid the claim that AI which we are able to recognize as AI and communicate with will necessarily have a humanoid body, at least with the very general analogs of human embodiment. Exactly what this entails is still unknown, since the body was ignored for so long in traditional AI theory. What is clear is that we must build something that can sense the world in a way that is useful for whatever sort of thing it is, and not simply try to endow human senses into a new organism. We do not hook a camera up to a blind person – instead we aid their inherent abilities in the world so that the information they extract is useful to them. If true identical replication of our sorts of bodily senses were the answer, would we not