Cognitive Enhancement in Primate Models in the Neurosciences

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Because of their phylogenetic proximity to humans, non-human primates are an import animal model for many normal functions of the brain as well as brain disorders. The introduction of new genome editing technologies in primate research opens the door to studies of neurological disorders, such as Alzheimer's disease and Parkinson's disease, as well as psychiatric disorders including schizophrenia, depression, and anxiety disorders, in ways which are neither possible in rodent models nor in humans (Jennings et al. 2016, Luo et al. 2016, Qiu & Li 2017, Tu et al. 2015). Furthermore, the recent birth of two cloned cynomolgus monkeys in China promises the possibility of producing significant numbers of genetically identical and genetically modified primates (Liu et al. 2018). The creation of disease models in primates involves significant ethical problems (Neuhaus 2017), even more so when a large group of primates with certain neurological diseases is created. The disease may cause painful symptoms or harmful behavior, including selfharm. This presents ethical problems on its own, but also problems for husbandry and animal welfare (Belmonte et al. 2015). Genome editing in primates has not only the potential of creating new disease models, but also that of cognitive enhancement beyond what is typical for the species. Cognitive enhancement may come about deliberately or as a side effect of making the primate model of the brain more human-like, whether the purpose is to improve disease models or to study normal functions of the primate brain. If this leads to human-like characteristics that are relevant for personhood, the primates may deserve the moral protection of persons which in turn might makes such research morally indefensible (Capps 2017). Finally, I will consider the claim that if cognitive enhancement of primates is possible and a benefit to them, then it is a moral obligation (Chan 2009).

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