

BRAIN DRAIN

Physicians have used brain imaging for decades to diagnose brain injuries and disorders. Rapid and continuous advances in neuroscience have resulted in the introduction of new imaging technologies and applications in a number of fields. Nascent innovations bring with them not only the promise to improve lives, but also the threat of abuse.

Representative Goodhart, a conscientious legislator committed to proactively addressing concerns, called together an ad hoc committee to examine the foreseeable applications of brain scans, and to recommend legislation to prevent abuses of the technology. Professionals from science and medicine, education, law enforcement, sociology, and members of the legislator's constituency comprise the committee.

At the committee's first meeting, Dr. Noruen brandished a copy of the 10 September 2010 issue of *Science* magazine. "You should all read about the ground-breaking work of Nico Dosenbach. His research on imaging the process of brain maturity has exciting possibilities for early diagnosis and treatment of autism, schizophrenia, and neurodegenerative disorders. We can evaluate more subtle and complex brain processes, and tailor treatments accordingly. This stuff just makes my day!"

Dr. Fugue added, "In my field of psychology, we are also excited about these advances. We are beginning to understand the processes of memory, emotion, cogitation, decision-making, and language; in short, the essences of personality and identity. We can tell where a child is on the scale of brain development, and determine if the child's brain is maturing normally. It is helpful in treating children with emotional disorders if we are able to determine whether immature behavior is a function of choice or a developmental problem.

Officer Rushmore chimed in, "That same application is just what we hope to be able to use to determine if a young offender should be tried as a juvenile or an adult! There are so many ways brain scans will make our work more efficient."

Ms. Day cautiously broke in. "I'm not a scientist, but, as a mother, I have concerns about many of these uses. Can't taking information from someone's brain in criminal matters become a form of self-incrimination?"

"Actually," began Professor Newby, "The state university is considering requiring brain scans as part of the admission application. If we were able to give applicants, whose brain scans show a lower level of maturity, another year or two before admitting them, it would create a more productive and safer environment for our students."

Mr. Knight cleared his throat and commented, "Like Ms. Day, I don't represent a profession, but as an ordinary citizen, I also have concerns. If brain scans are acceptable for universities to use in the application process, would they also become part of the hiring process? Would parents demand scans of their children to give them a better chance of being accepted into certain colleges, or to ameliorate their supposed social deficiencies? I can see, though, that this technology would be helpful in determining the fitness of custodial parents in a divorce."

"You know," mused Professor Newby, "I can see the possibilities of using brain scans to ascertain if enemy combatants are telling the truth. Sure beats torture."

Representative Goodhart listened attentively, aware that there was a great deal to consider before proposing legislation to prevent abuse of brain scan technologies.