

Half-Academic: Mode 2 Science and Career Path of Researchers

Miwa Kuri¹, Yuko Murakami^{1*}

¹Science, Tohoku University

This paper aims to point out the existence of communities of "half-academia" as a subgroup of those who currently conduct mode 2 science. Half-academia consist of Ph.D. holders who work in local communities. The phenomena is observed only in those research areas in which Ph.D. holders can pursue professional careers outside of academia; which coincides with the intersection of the following:

* Areas to which governmental or other funding agencies allows researchers outside of academia to apply for their fundings (security and safety, environmental issues, etc)

* Areas in which local governments need professional supports

The phenomena of mode 2 knowledge production were first explicitly observed around late 1980s. While Gibbons [1991] first points out that it is a consequence of popularization of higher education, our hypotheses are: (1) that the actor body of mode 2 science has shifted from college graduates to Ph.D. holders in the recent two decades; and (2) that the phenomena are consequences of paucity of academic positions in universities and research institutes which is associated to popularization of graduate education in Japan in the 1990s. The hypotheses will be supported by (1) observation and interviews of Ph.D. holders in geological science in non-profit organizations in Japan; (2) statistics of the number of granted Ph.D. and that of academic positions ; and (3) In the USA and Japan, it was the late 1980s job security of Ph.D. holders in academia began to be unstable at the same time as extension of higher education was politically stopped. Ph. D. holders without academic positions have found their way as professional scientists in "half-academic positions". Since they need to support themselves, the phenomena are in practice limited in research areas in which governmental or other fundings on research and related activities are available for non-academic institutions; for example, environmental science for preservation of local environmet, or geological science for eco-tourism and safety. Nevertheless, services in those fields have been considered to be freely provided, because either the actors had been amateur scientists who do not expect little income from tose activities before those with professional training began to join, or companies sponsored those activities as parts of social actions during booming economy in 1980s. Science communication between academia and half-academia does not fit the standard recommendation for scientists in a traditional sense of two-way science communication to listen needs of non-academic stakeholders, since most participants are professionally trained scientists in the current framework. Those who are out of academia but in half-academia need most of heavily context-dependent science communication skills. Our hypotheses thus suggest that (1) the recent policy to lead career paths of Ph.D. holders toward science communicators are misleading and will not be effectively realized without budgetary supports of the activities in half-academia; (2) science communication is in turn essential in half-academia, but only on-site training of communication are effective in addition to skill trainings of research management, because of divergence of local needs.

Keywords: mode 2 science, career path of researchers, science communication