Abstract

The Matthew Effect in Open Science

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The existence of a “Matthew Effect” (a feedback loop where (dis)advantage tends to beget further (dis)advantage) in science has long been recognised. In 1968, Merton[1] proposed that already successful scientists receive disproportionately high rewards in comparison to less-famous counterparts. Subsequent studies have identified the Matthew Effect at work based on criteria like institutions, departments, geographical proximity and countries, as well as the individual attributes of researchers (e.g., race, gender). It is at work across scientific endeavours, including peer review, public engagement, article citations, funding acquisition and prestige as measured via awards/prizes.

Open Science promises to fundamentally transform scholarship to bring greater transparency, inclusivity and participation to research processes, and increase the academic, economic and societal impact of research outputs. Yet access is not made uniform simply because resources are made available via the Internet. Re-use and participation must also be accompanied by the capacity (in terms of knowledge, skills, technological readiness and motivation) to take up these resources. Absorptive capacity varies considerably. This is true of institutions, businesses and people. Such differences are exacerbated by factors like geographic location, language abilities, technological skills, educational levels and access to basic equipment (including, e.g., Internet access). Those in possession of such capacities will remain at an advantage, with the effect that Open Science’s laudable agenda of inclusivity is put at risk by conditions of “cumulative advantage” (“Matthew Effect”).

This presentation outlines our first findings on the extent to which Open Science practices (OA, FAIR data, open peer review, etc.) are subject to the Matthew Effect and opens up to critical discussion the extent to which current strategies for achieving Open Science may actually exacerbate or introduce inequalities.

[1] Merton, R.K., 1968. The Matthew Effect in Science: The reward and communication systems of science are considered. Science 159, 56–63. https://doi.org/10.1126/science.159.3810.56