

Editorial

JAD: A Forum for Philosophy in Science

Timothy Daly^{a,b,*}

^aScience Norms Democracy UMR 8011, Sorbonne Université, Paris, France

^bBioethics Program, FLACSO Argentina, Buenos Aires, Argentina

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Abstract. The *Journal of Alzheimer's Disease* (JAD) is already an established forum for cutting-edge science as well as ethical reflection. But I argue that beyond science and ethics, JAD is also a forum for philosophy in science, and that interdisciplinary researchers asking innovative questions about AD should publish their reflections and findings in JAD.

Keywords: Alzheimer's disease, ethics, interdisciplinary research, philosophy, philosophy in science, philosophy of science, science

There is an urgent need for solutions for Alzheimer's disease (AD). The *Journal of Alzheimer's Disease* (JAD) and its sister online-only Open-Access journal, *JAD Reports*, are well-established interdisciplinary fora for cutting-edge science on AD. JAD also has a dedicated Ethics section, of which Dr. Allyson Rosen is the Editor, and which primarily features the Ethics Review and Response formats [1]. But I will argue that beyond science and ethics, JAD can also serve as a fruitful forum for philosophy *within* science to help find solutions to problems related to AD (Fig. 1).

Generally speaking, normative philosophy tends to be distant from the practice of empirical science: philosophers may have more or less technical knowledge about the condition, and generally publish in philosophy rather than scientific journals. In other words, they generally perform philosophy *on* science. Between empirical and normative questions, we find philosophy *in* science or 'PinS' (pronounced "pins"), which uses philosophical tools to solve scientific problems [2]. PinS or "embedded philosophy"

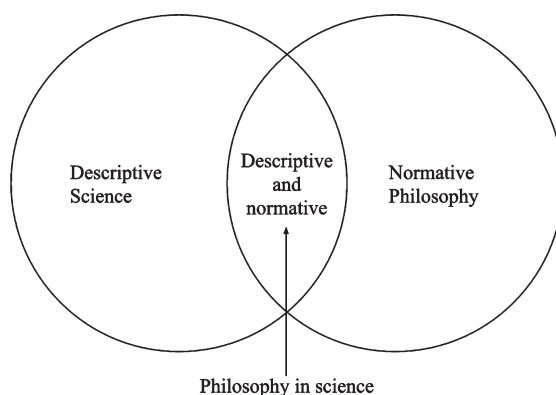


Fig. 1. The *Journal of Alzheimer's Disease* as a forum for philosophy in science between descriptive science on one hand, and normative philosophy on the other. While empirical science on AD is concerned with *describing* the condition, much philosophy and ethics related to AD is concerned with how clinicians and researchers *should* act and is "normative," because it appeals to norms to assess actions. Philosophy in science uses a mix of descriptive and normative methods to tackle issues relevant to, as well as emerging from, scientific practice.

*Correspondence to: Timothy Daly, PhD, Sorbonne Université, Science Norms Democracy UMR 8011, 1 Rue Victor Cousin, Paris, 75005, France. E-mail: tdaly@flacso.org.ar.

[3] has the benefit of being closely related to scientific practice but is not limited by wet lab methods or entirely descriptive goals.

Table 1
Three epistemological issues requiring interdisciplinary solutions in research into Alzheimer's disease

Epistemological issue in AD research	Associated ethical issues	Possible solutions
Over-reliance on the amyloid hypothesis to find a disease-modifying treatment for AD	Exposing people to anti-amyloid treatments with possibly harmful side effects [10] Overlooking viable etiological theories of AD [11]	Strict usage guidelines for anti-amyloid medicines [12] Improving the visibility and impact of alternatives to the amyloid hypothesis [13]
The unknown therapeutic and prognostic value of <i>in vivo</i> biomarkers of AD pathology	Premature over-medicalization of biomarkers before dementia [14] Stigma around the AD concept, even in the absence of dementia [15]	Underlining the limits of the biological definition of AD [16] Warning against the harms of over-screening of biomarkers and use of premature stigmatizing language [17]
Lack of integration of genetics and epidemiological approaches to dementia	How to spend limited research resources and assure equitable prevention [7]	Involving different stakeholders in debates around priority setting [5]

I consider myself to be a philosopher in science: I ask questions about how we can improve AD research, and publish with scientific colleagues in scientific journals, but I no longer perform wet lab research. Ideally, the impact of PinS is upstream of scientific experiments, i.e., asking questions before experiments get undertaken so as to improve the likelihood that future results are useful [2]. In part one of my PhD, I used a bibliometric study of citation practices of the amyloid cascade hypothesis [4] and an international expert survey promoted on Twitter [5] to get access to how researchers have invested their belief in amyloid- β and other therapeutic targets. Then in Part 2, I offered an analysis of the concept of association to try and guide a post-amyloid view of AD research [6], and in Part 3 I took a more explicitly ethical turn [7]. These papers were published in JAD and JAD Reports. Other colleagues undertaking embedded philosophy have published similar innovative research at the interface of scientific methods and ethical concerns [8, 9].

Broadly speaking, there are many unresolved philosophical issues related to empirical research and ethical questions emerging from AD research, that we might call “epistemological issues” because they relate to knowledge (from the Greek *episteme*) but are not necessarily solved merely by wet lab investigation. Three such issues strike me as particularly pressing for the future of AD research (Table 1).

Because of my scientific training, my PhD supervisor Yves Agid aptly quipped, “Tim, the problem with the acceptance of your work is that, to scientists, you’re a philosopher, but to philosophers, you’re a scientist.” Thanks to JAD, I have managed to overcome this unnecessary opposition between science and philosophy as a philosopher embedded in science.

I encourage other interdisciplinary researchers asking epistemological questions about AD to also publish in JAD using a PinS approach, or to draw on related approaches from human and social sciences including history of science [18], anthropology of medicine [19], and sociology [20]. It is vital that scholars across different fields continue to question AD research and its place in society so as to improve the likelihood that effective and equitable solutions be found.

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