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Postpositivist theory

Speaking theoretically about population health

James R Dunn

The theoretical project of population health is still in early infancy and is still quite marginal to the main emphasis of most publications in the field.

In the past few years, several population health and social epidemiology scholars have argued the need for better theory.^{1–3} Given the comparatively underdeveloped social theoretical foundation for population health research, any progress in this area is reason for celebration. The glossary by Carpiano and Daley in this issue of *JECH*⁴ will help to reinforce and expand the awareness of the importance of theory in our work. Yet I would argue the theoretical project of population health is still in very early infancy and sadly, is still quite marginal to the main emphases of most publications in the field. Carpiano and Daley suggest that the need for theory is at least partly due to more interdisciplinary work, while I believe the main issue is between competing notions of what constitutes “explanation” and “theory” in science, which can vary as much within disciplines as it can between them. In the following few words, I use Carpiano and Daley's glossary as a springboard for some additional thoughts about the theoretical foundations of population health research.

Given that “population health” is a vague term, it is worth briefly outlining what I consider its primary explanatory challenges to be, because it is to these challenges that a more theoretically informed population health research programme will have to rise. Population health stated plainly is a broad and complex field that must explain the systematic, differential distribution of health status by socioeconomic position. This enduring tendency,

we know, holds across a wide variety of health conditions and disease states (from accidents and injuries to mental illness to coronary heart disease) and for a variety of conceptions of socioeconomic position (for example, social class, minority status, educational attainment), to different degrees at different stages of the life course and differently for males and females. The explanatory project of population health, I believe, is to be able to combine both empirical and theoretical research that links: (a) “cell to society” (actually, subcellular as well) through some “biopsychosocial translation”,⁵ (b) individuals to the experience of a quasi-nested, scaled, and stratified social world (neurons to neighbourhoods to nation states?),⁶ and (c) “cradle to grave” or can explain exposures and outcomes that are separated by differing, but often very long temporal scales (for example, from early childhood to late adulthood), through different possible modes, including latent, cumulative, and pathways effects.⁷ All of this, of course must account for a complex background of both slowly evolving and punctuated historical changes and an increasingly complex set of geopolitical relations across the globe.

Clearly, such an ambitious explanatory project cannot be achieved by simply adapting the methodology and philosophy of the natural sciences. Even if we had a dream dataset, would it be able to “explain” population health? I would argue no, but that depends on what we mean by “explain”. Only within a shared (and probably

pluralistic) understanding of what counts as explanation in science can we prescribe what “theory” is and how it should be used. I would urge the fields of population health and epidemiology to embrace broader notions of theory and explanation to supplement the traditional one and the ones Carpiano and Daley prescribe.

Drawing from critical realist philosophy, Sayer⁸ suggests that three notions of theory (all legitimate but each partial) are commonly used in the social sciences: (a) theory as an ordering framework or a kind of “filing cabinet” for organising different phenomena and variables; (b) theory as a hypothesis or a functional explanation of why variable A is associated with variable B; (c) theory as an examined conceptualisation of a phenomenon or thing in which to theorise is to prescribe a particular way of conceptualising something. This latter notion of theory is one that scholars seeking scientific objectivity often shy away from for its prescriptive aspects. The irony, however, is that a failure to explicitly state one's conceptualisation is tantamount to advocating common sense notions of social phenomena and population health. This is highly problematic, because, as Sayer suggests,

“[A] social science which builds uncritically on common sense, and reproduces these errors, may, at a superficial level, appear to produce correct results. On the other hand, from the standpoint of common sense, which takes its knowledge to be self-evident and beyond challenge, the knowledge produced by critical theories such as marxism will appear to be false because it conflicts with what it judges to be the case ('an affront to common sense!'). Yet such theories aim not just to present an alternative or to reduce the illusions inherent in social understanding, but to represent and explain what actually exists as authentically as possible”(p 43).⁸

Using the same two examples as Carpiano and Daley, the health effects of local food access and the Evans and

Stoddart⁹ population health framework I will attempt to illustrate this notion of theory. Notwithstanding the fact that Carpiano and Daley admit their explanation of the relation between food access and health is intentionally simplistic, their focus illustrates the limitations of a narrow view of theory (theory (b), above). If it was possible to uncover all of the putative connections they discuss, for example, showing that there are geographical differences in local food quality and access, and that these were linked to obesity, either with or without mediation by cultural food practices, income, etc, this would be valuable information. But it would not address why it is there is a systematic spatial differentiation to food access by neighbourhood. For example, we might ask what beliefs, practices, constraints, etc, govern the retail food industry, what part do third sector organisations like food banks play, how are urban development trends or various levels of government involved, and what societal discourses legitimate the perpetuation of such disparities? For such answers we might look to geographical theory on the structural forces driving the tendency towards urban socio-spatial differentiation,^{10, 11} or to critical theories of food access and urban development.^{12, 13} A pluralistic approach to theory, in other words, should be our aspiration, but this presupposes an understanding of the typology of theory Sayer⁸ describes.

Similarly, Carpiano and Daley criticise Evans and Stoddart for a framework that is too abstract to yield testable hypotheses. Now the shortcomings of the "social environment" component have been acknowledged by the authors themselves,¹⁴ but I would argue that the framework's level of abstraction is its strength, irrespective of its ability to

yield empirically testable hypotheses. Particularly noteworthy is the part of the framework that summarises a "furnace and thermostat" metaphor to represent the interaction between the burden of illness and the healthcare system in a society. This framework, I would argue is an examined conceptualisation of the structure of a system and its interaction with other systems (theory (c), above). It quite rightly defies straightforward empirical testing, and better judged for its internal consistency, cogency, and plausibility for explaining a real world phenomenon, and revealing previously unseen and unarticulated aspects of that phenomenon. The importance or validity of a theory is not reducible to its level of abstraction or its adaptation to conventional empirical research methods, this usually just implies that the theory is of a different type ((c), as compared with (a) or (b)).

The implication of the critical realism notion of theory (theory (c), above) is that the relevance of social epidemiology and population health is tied to its ability to provide theoretically informed explanations that "stand in a critical as well as an explanatory and interpretive relationship to its object and to common-sense knowledge" (p 41).⁸ This implies that "social science should not be seen as developing a stock of knowledge about an object which is external to us, but ... that the social world is socially produced and hence only one of many possible human constructions" (p 41).⁸ In other words, we need a pluralistic vision of theory, which includes ordering frameworks, hypotheses, but also examined conceptualisations which prescribe critical theories of society that reveal transformative opportunities for the betterment of population health.

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Correspondence to: Professor J R Dunn, Centre for Research on Inner-City Health, St Michael's Hospital, 30 Bond Street, Toronto, ON M5B 1W8, Canada; jim.dunn@utoronto.ca

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Postpositivist theory

Where does new theory come from?

Denny Vågerö

Establishing a theory of population health will depend on researchers giving up their disciplinary narrowness.

It is certainly a good ambition to clarify through a glossary how we use words like theory, model, hypothesis, and research question. The authors should be commended for trying. However, I found their views on the building of new theory not convincing.

(1) The whole approach to theory seems somewhat unrealistic. One crucial aspect is missing, in my view. Does theory come from an orderly process, like when we build a house, starting with the foundation, then the load bearing walls, etc? Here, "theory

building" is depicted as starting with a framework (where does the framework come from?), then moving to theory that is later tested in a model. It seems to me that the birth of new theory is a much more chaotic process, the characteristics of which we should learn to recognise.

A 100 years ago last year Einstein's theories about light and relativity were formulated. A visit to the Einstein exhibition in Berlin last summer convinced me that his theories were the result of the fierce conflict between old and new schools of thought, and the inability of both these schools to accommodate empirical (experimental) results in a consistent way. For instance, there was no consensus whatsoever about any