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The Implications of Fundamental Cause Theory for Priority Setting

Daniel S. Goldberg, JD, PhD

Application of fundamental cause theory to Powers and Faden's model of social justice highlights the ethical superiority of upstream public health interventions.

In this article, I assess the ramifications of fundamental cause theory specifically in context of public health priority setting.

Ethically optimal public health policy simultaneously maximizes overall population health and compresses health inequalities. The fundamental cause theory is an important framework in helping to identify which categories of public health interventions are most likely to advance these twin goals. (*Am J Public Health*. 2014;104:1839–1843. doi:10.2105/AJPH.2014.302058)

IN 1995, MEDICAL SOCIOLOGISTS Bruce Link and Jo Phelan

published an article titled “Social Conditions as Fundamental Causes of Disease.”¹ Therein, the authors articulated a new theory explaining the criteria for a “fundamental” cause and how socioeconomic conditions qualify. In the interim, the literature on fundamental cause theory (FCT) has steadily grown, with at least 30 articles directly addressing the subject and almost 2000 citations of the original article.

Despite the accumulating evidence base, to date, few attempts have been made to analyze the ethical implications of FCT. In this article, I aim to help fill that gap, and specifically argue for the significance of FCT in illuminating critical issues of priority setting and social justice in public health policy.²

It is important to note that I do not offer a theoretical ethical analysis of FCT. Rather, my emphasis is on the practical ethical problem of priority setting in

public health. Priority setting is an inherently value-laden inquiry, which is one reason why it is a central topic in public health ethics. It follows that, to evaluate public health priorities, some grounding in ethical theory is required even where the objective is to explore some of the practical ethical implications of FCT.

A FUNDAMENTAL CAUSE THEORY PRIMER

Fundamental causes involve lack of access to resources that can be used to avoid risks or minimize the consequences of disease. Under Link and Phelan's rubric, 3 criteria qualify a cause of disease as fundamental. First, fundamental causes tend to cause multiple diseases. Second, fundamental causes determine multiple risk factors. Third, fundamental causes tend to persist. Link and Phelan give the example of an

individual forced into prostitution as a subsistence strategy; such a person may be entirely unable to avoid known risks. But the sexual acts themselves are intervening mechanisms rather than upstream causes, which in this case would likely be some combination of material deprivation, inadequate income, oppressive power structures, etc. These factors are, in Sir Geoffrey Rose's formulation, causes of the causes.³ Insufficient socioeconomic status (SES) is a fundamental cause of sexually transmitted disease, as the evidence documenting social gradients in such diseases implies.^{4,5}

Moreover, such social gradients are robustly correlated with global disease burdens.⁶ This is Link and Phelan's first criterion: low SES is strongly correlated with myriad diseases. The second characteristic, that it determines multiple risk factors, is also present in the case of SES. Low SES is not



simply a determinant of risky sexual behavior. It also substantially determines an array of other risk factors, including poor housing, low educational attainment, smoking, and poor nutrition, as well as exposures to environmental hazards, violence, and racism or discrimination.⁶

The third characteristic of a fundamental cause of disease is that it persists over time. This is easy to perceive with regard to SES. Link and Phelan explain that in the United States in the 19th century, adequate sanitation and sewerage was a chief risk factor for disease. Availability of sanitation followed a social gradient, with the affluent accordingly experiencing lower rates of waterborne disease. As access to sanitation became more equally distributed, it ceased to act as a widespread risk factor. But the link between SES and disease persisted because new mechanisms arose that mediated the relationship (e.g., smoking and poor nutrition).

Link, Phelan, and their collaborators argue that FCT helps explain why emphasis on intervening risk factors is ineffective inasmuch as it leaves structural determinants of disease untouched. Thus, provision of sanitation without concomitant attention to the socioeconomic conditions that structured its 19th-century distribution is suboptimal. The fundamental cause continues unabated, and over time is likely to manifest new mechanisms through which the tight connections between low SES and health deficits are perpetuated.

ETHICAL FRAMEWORK FOR EVALUATION OF PRIORITY SETTING

Although there are many ethical frameworks that might ground assessment of priority setting in public health, one of the most germane for FCT is Powers and Faden's health sufficiency model of social justice.⁷ Powers and Faden join a number of public health ethicists pointing to the clustering of social disadvantage as enormously important.^{8–10} That is, members of a group that experience some social disadvantage are much more likely to experience others as well. These disadvantages compound to form what Powers and Faden term "densely-woven patterns of disadvantage," escape from which "requires heroic effort, good luck or both."^{7(p76)} As one descends the social gradient, it becomes increasingly unlikely that those groups ensnared in densely woven patterns of disadvantage will be able to achieve a sufficient level of health to permit human flourishing. This inability contravenes social justice.

Most importantly for FCT, Powers and Faden's model offers an answer to perhaps the most difficult priority-setting issue in all of public health ethics: which inequalities matter most?¹¹ According to Powers and Faden, those inequalities that intensify densely woven patterns of disadvantage are of highest ethical priority because such webs are powerful determinants of health and its distribution.⁷

Moreover, Powers and Faden recently referred to their model as a "twin aims" theory,¹² underscoring the notion that ethically

optimal public health policy maximizes 2 goals: improvements in absolute population health and compression of health inequities. To return to the example of sanitation: presuming an equitable distribution of sanitation, the whole population's health will improve. At the same time, because the least well-off bear disproportionate burdens of waterborne disease, sanitation-induced health gains will be greater for the poor than for the affluent. Sanitation both improves absolute health and compresses health inequities and is therefore ethically optimal.^{10,13}

IMPLICATIONS FOR PRIORITY SETTING

A primary example of a public health intervention that addresses fundamental causes of disease is intensive investment in early childhood development (ECD). Because it enjoys a particularly robust evidence base, ECD is likely to improve overall population health.^{6,14,15} The Abecedarian Project evaluated "one of the most intensive early childhood programs ever provided for poor children," consisting of full-time, individualized educational interventions from infancy to age 5 years.^{16(p3)} Long-term follow-up revealed, among other benefits, increased likelihood of college attendance, reduced risks of adolescent parenthood and smoking, and a cost-benefit ratio of 2.5 to 1.¹⁶ Moreover, because the affluent are better able to provide environments in which children can flourish, investment in ECD is likely to benefit the least well-off more than the affluent, thereby

compressing health inequities related to adverse childhood experience.

Because childhood is a sentinel period that can predict health intergenerationally,^{17,18} interventions directed at improving childhood socioeconomic conditions could have corresponding intergenerational effects. This point reflects the life course hypothesis, which posits that early life conditions have dramatic influence on health across the life span.¹⁹ Analytical concepts such as "accumulation of risk" and "clustered chains of risk" are central to life course epidemiology,¹⁹ suggesting an overlap with the emphasis on compound disadvantage in both FCT and in Powers and Faden's model.

Investment in ECD therefore goes beyond the traditional public health focus on primary, secondary, and tertiary prevention to what some have called "primordial" prevention.²⁰ Such prevention has implications for what Graham terms "future publics," a population that has generally received insufficient attention.²¹ Moreover, prioritizing ECD is likely not simply to improve overall health of present and future publics, but is also an example of an intervention that, insofar as it is targeted at ameliorating upstream socioeconomic conditions, is less likely to expand health inequities. Rose documented this trend nearly 30 years ago^{3,22} and used it as part of the basis for his "whole population" approach. By contrast, interventions targeted at producing downstream individual behavioral change, for example, are ethically suboptimal



because the benefits of such “agentic” interventions depend on the resources that the individual agent possesses.²³ Agentic interventions therefore have the tendency to expand health inequities.^{13,23} Although this may not militate against the use of an agentic intervention in any particular case, as a category they are ethically suboptimal and ought to be regarded as a lesser priority in public health policy. Ultimately, because the evidence suggests that ECD interventions may improve overall population health and compress health inequities, such ought to be regarded as among the highest priorities for public health.

The factors that produce and fuel densely woven patterns of disadvantage are in many cases the same conditions that qualify as fundamental causes of disease. An example of this that Link and Phelan deem particularly important is stigma. Although the corrosive effects of stigma on health have been documented for some time, Hatzenbuehler et al. recently argued that stigma is a fundamental cause of disease: stigma influences multiple disease outcomes through a variety of mechanisms, and its effects persist.²⁴ Moreover, because by definition the in-group must enjoy power sufficient to brand the out-group, stigma is linked to the same power structures that drive social inequalities.²⁴

Because the intensification of stigma exacerbates densely woven patterns of disadvantage, it contravenes Powers and Faden’s model of social justice and should be avoided. And as the most materially deprived groups are already more likely to experience

stigma, intensifying such inequalities seems almost impossible to justify. This is a particularly important problem for public health when one considers that some categories of interventions—such as those targeting lifestyle change—tend to worsen stigma.²³ Fortunately, there is evidence that a wide variety of stigma-reduction programs have at least some effect.²⁵ Examples include specific antistigma laws, and approaches at interpersonal and community levels that utilize a combination of counseling, education, and contact.²⁵ Implementing such and assessing their efficacy is a crucial component of an approach to public health that prioritizes attention to fundamental causes.

Priority in interventions is not all that FCT can illuminate; policy development should also be subjected to normative assessment on the basis of the extent to which a particular approach is likely to maximize the twin aims. The FCT suggests that one promising approach is the “Health in All Policies” (HiAP) framework increasingly being used from local health departments to global health governance.^{26,27} The HiAP framework begins from the perspective that many critical determinants of health fall outside traditional foci of public health practice, and urges policymakers to consider the health impact of policies in domains such as housing, education, child care, and labor. Devoting attention to health impact across policy domains is consistent with what FCT would suggest as priorities in public health policy. Indeed, it is difficult

to understand of what HiAP would consist if its framework did not direct policy resources to many of the same upstream variables that are most likely to qualify as fundamental causes. The HiAP framework is accordingly important insofar as it represents a potential framework through which FCT could be utilized in public policy development. Moreover, HiAP can also help address an important objection to the use of FCT in public health policy known as “the boundary problem.”

OBJECTIONS

Application of Powers and Faden’s model of social justice to FCT suggests that emphasis on upstream public health interventions is of highest ethical priority. It is worth considering several of the most compelling objections. First is the boundary problem, which refers to the idea that if virtually every policy domain determines population health, then public health is boundless.²⁸ Public health actors could conceivably justify an impossibly broad scope of interventions.²⁹

Concerns over the boundary problem are understandable but unpersuasive.^{30,31} First, where issued as a response to a normative claim regarding priority setting, the boundary objection constitutes a category error. If the ethical justification for prioritizing attention to fundamental causes is valid, the fact that doing so might erode boundaries between traditional policy domains is a non sequitur. Even if true, the organizational problems that animate the boundary objection do

not undermine the ethical justification for emphasizing attention to fundamental causes. Perhaps, if *ought* implies *can*, boundary problems sufficient to render impossible intervention on fundamental causes undermine the ethical case for the latter. But there is little indication that such is actually the case, and it is a high bar to show that action on fundamental causes is literally impossible where there is no shortage of examples of policies and programs across the globe that do so. Second, even if the boundary objection did have normative force, the practical difficulties can be navigated. The HiAP framework is founded upon the fact that a dizzying array of policy domains address determinants core to population health. Whether HiAP is ultimately efficacious remains to be seen, yet its increasing popularity suggests there may be ways to manage the difficulties posed by the breadth of fundamental causes.

A second possible objection concerns the time horizon needed to effect the kinds of structural changes implied by FCT. It is commonly presumed that attention to upstream determinants requires expensive sociopolitical transformations whose effects may only appear over several generations. However, such is not always the case. Indeed, the final report of the World Health Organization’s Commission on Social Determinants of Health is entitled, “Closing the Gap in a Generation,” and a surfeit of evidence therein suggests that doing so is quite possible.⁶ Regarding cost, economic analyses suggest that action on structural determinants of health



is generally cost-effective.^{32,33} More specifically, numerous evaluations of ECD programs show that they are highly cost-saving.^{34,35} Nevertheless, the claim here is not that attention to fundamental causes is necessarily rapid or inexpensive. Rather, the argument is that the assumption that such attention is generally too protracted or costly is unjustified. Prioritization of FCT-based interventions must instead be carefully examined to determine the true time horizon and costs.

But even if prioritizing attention to fundamental causes were time-intensive and expensive, it does not follow that such prioritization is unjustified. In a situation in which such a priority is more likely to improve population health and compress health inequalities, it might still be ethically superior to a quicker, cheaper, but less-effective alternative. Therefore, the time or cost objection fails to show that a narrower approach to public health emphasizing downstream interventions is necessarily preferable to one that prioritizes action on fundamental causes of disease.

A third objection posits that a lack of political will renders prioritization of fundamental causes untenable. Assuming that the empirical premise is correct, this is a potentially serious practical problem. But it is fallacious to infer therefrom that such prioritization is morally inferior to models of public health that may be more practical but have far less impact on the twin aims. The ethics of health policy paradox³⁰—that which we ought to do may not be what we can do, and that what

we can do may not be what we ought to do—is a problem. But choosing to simply do what we can because it is expeditious is no answer at all. The crucial normative question remains unresolved: whether selecting a more practical but inferior approach better satisfies norms of social justice than prioritizing an arguably less pragmatic but almost unquestionably more effective approach that directs public health resources to fundamental causes of disease.

CONCLUSIONS

Public health leaders have already affirmed a commitment to prioritizing attention to fundamental causes of disease.³⁶ Application of Powers and Faden's health sufficiency model of social justice to FCT provides a framework for understanding why such priority is ethically optimal. There may well be legitimate reasons to prefer models of public health that prioritize attention to downstream determinants of population health, some of which were discussed previously. Nevertheless, FCT suggests that such emphasis may have less impact on population health (especially for future publics) at the same time that it may expand health inequities. Demonstrating why it is preferable to allocate scarce public health resources to approaches that do little to break densely woven patterns of disadvantage is therefore a paramount normative challenge for models of public health that do not prioritize attention to fundamental causes of disease. ■

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