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Commentary

Can Social Contagion Help Global Health ‘Jump the Shark’?

Comment on “How to Facilitate Social Contagion?”

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Abstract

The instrumental use of social networks has become a central tenet of international health policy and advocacy since the Millennium project. In asking, ‘How to facilitate social contagion?’, Karl Blanchet of the London School of Hygiene and Tropical Medicine therefore reflects not only on the recent success, but also hints to growing challenges; the tactics of partnerships, alliances and platforms no longer seem to be delivering at the same rate and maybe reversing. A better understanding of how social networks work may therefore be needed to strengthen a tactical instrument that has been used to remarkable recent effect. But in focusing on the unbounded rhetoric and narrative options of Global Health, the danger will surely be on missing the fundamental factors constraining network growth. Future growth will depend on understanding these constraints, and Global Health may do well to think of social networks not only instrumentally, but also analytically in terms of the strategic contexts and environments in which such instruments are deployed.

Keywords

Health Systems, Social Network Analysis, Network Theory, Health Co-Production

Introduction

In the third of a series of articles on the possibilities for (social) network theory and analysis in health systems policy and management, Karl Blanchet gives a good introduction to ‘How to facilitate social contagion?’ (1–3). That is, how to use social networks to spread ‘innovations’ or ideas in (international) public health. Interestingly, while the article focuses on ‘how’, answers to the questions of: ‘What idea(s) or ‘innovations’ are being considered for viral spread?’ or; ‘Why?’; seem so self-evident as to receive little, or only tangential consideration. But without answering these questions, it would seem unlikely that recent ideas and innovations about international public health will ‘Jump the Shark’ (4).

The conclusion must surely be that while (social and commercial) marketing and advocacy in medicine and public/global health will continue to attempt to use social networks *instrumentally* as a tactical tool to ‘sell’ or ‘virally market’ products and policies; social network analyses and network theory may be of far greater value for *strategic analyses*. Adaptive health policy strategies might then be formulated that while not focused on occasional great leaps in public health and well-

being, could lead to something as if not more valuable in the longer-term; continuous tiny improvements.

Viral social marketing and jumping the shark

Interest in social contagion and the spread of innovations and ideas through medical and health networks is not new. The classic study by Coleman, Katz and Menzel related to the diffusion of *Tetracycline* amongst physicians in four cities of the US Midwest in the 1950s (5). Diffusion theory and the spread of ideas and innovations through social structures and networks can arguably be traced back to the French sociologist Tarde in the 19th century. What is perhaps newer, has been the idea since the Millennium Development Goals (MDGs) that not only intangible (health and social) policy goal(s) and even the ‘values’ can be marketed and spread in the same way as tangible technologies, but also the active diffusion of these ideas might be possible at a global level and across a vast array of cultures and languages (6). By creating ‘partnerships’ between high-influence ‘nodes’ across (sub-) networks—even networks superficially at odds with one another such as western humanitarian organisations and international pharmaceutical companies—it is possible to advance and even accelerate the adoption of any policy idea or ‘innovation’.

The power of using social networks *instrumentally* in this way for international public health is now seldom disputed. Indeed, though Country Coordination Mechanisms (CCMs) under the Global Fund, national and (inter-) national health (sector) advocacy networks were expanded and to some extent formalized. Global development assistance for health has also increased from approximately US\$10 Billion in 2000 to US\$28 Billion by 2010 (2010 prices) (7). But the title of the report from which these data are taken also anticipates what many now fear; ‘The End of a Golden Era’. Since 2010, international funding for health has levelled out and may even be declining, and drug resistance and pathogens continue to adapt. Aggregate data for such adverse developments are not yet widely available or published, but local effects are already being felt (8).

It is then hardly surprising that faced with the prospect of failing to ‘jump the shark’ after what has been a remarkable advocacy (social ‘marketing’) campaign, and avoiding inevitable declines at the end of the ‘product life cycle’ of the MDGs and global

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health innovation that public health professionals, and related international agencies, are asking themselves the same question as Karl; ‘if evidence of cost-effectiveness is no longer working, what evidence might?’ Does a potentially “global health system” and movement even run the risk of being stillborn? (9).

For a solution, Karl suggests looking to the source of success. He provides a good introduction. And he also identifies three outstanding questions: the characteristics of network links; the ‘bounds’ to network growth, and; the performance characteristics of alternative network architectures. However, only by taking an analytical, rather than an instrumental view of social networks might it be possible to answer these questions.

Social networks as the context not instruments of health policy and management

In the first paper in this series, I suggested that by the simple extension of adding economic-, to dominant: sociological-, (social) (psychiatric and) psychological-, and political science-, theories and approaches in the field of social network analyses, it is possible to distinguish quite clearly between two distinct categories of (or “bounds” to and sources of “homophily” within) social networks in health systems: networks of those demanding and applying physical and real resources to supply health and well-being solutions (*health professionals*), and; networks of those supplying the means (in the form of transferable real resources) to mobilize those physical resources, but who subsequently also enjoy the benefits (real and perceived) of health and well-being solutions being offered (*insureds*). Nor are the two networks discrete from one another as individuals and organisations (cells and nodes) may belong to both network categories simultaneously within, for example, any sovereign state (Figure 1) (1).

With respect to the case under discussion, the MDGs and Global Health, both the rapid diffusion of ideas and/or expansion of networks carrying them, but also subsequent limitations to providing ‘cost-effectiveness’, or indeed any other ‘evidence’ or narrative and potential reversals of fortune could then easily be explained and might even be anticipated. Furthermore, the spread of any such idea could also be measured, as for example in n-grams, in the lexicological units that articulate the idea or innovation—for example, “Tetracycline” or “Global Health” as a proper noun.

Any difficulties will arise not due to the system ‘complexity’ but due to the fact that primary variables subject to adaption will not be the real resources contested between the two categories of networks (or risk or uncertainty as to future values), but the

words and discourses used to describe real resource transaction and interactions between them! Discussion is unlike to involve ‘complexity’, cyclical dynamics, as much as complication or simply confusion; particularly where, as a result of the so-called ‘nudging’ and social influencing exercises, such as ‘framing’ or ‘priming’, lexicological values might change. The use of the term, “cost-effectiveness”, is a perfect example.

In contrast to the use of ‘cost-effectiveness’ information and evidence in the formulation and marketing of the MDGs and international health, the original objective of cost-effectiveness research was not to provide ‘evidence’ to ‘mobilize resources’ for ‘essential health services’ (positive list formation), it was precisely the opposite; rationing (10). Furthermore, the tools were not designed for use in development aid and foreign policy (discretionary budgets and public) finance, particularly where capacity for data and analytical due diligence is limited if not absent, but for use in the mandatory public finance budgets of legally bound sovereign solidarity networks. The original purpose of such information was then to de-prioritize (‘ration’), as transparently as possible, less essential services, to ensure the survival of sovereign health solidarity systems as a whole within the constraints of the fiscal spaces of sovereign solidarity networks (11). That is, to establish points of compromise between national networks of both funders/users/tax payers and suppliers of health services and hence attempt to balance (future hence uncertain) real resource imbalances or “risk”.

Nor can it be a coincidence that cost-effectiveness tools were first developed in those two OECD countries where no institutional distinction was made, hence negotiating space available, between the networks of those supplying and the networks demanding, real resources to furnish health and well-being solutions in favor of ‘integrated health system’ or single hyper-agent representing all networks simultaneously. Ironically perhaps, it is also this hierarchical network governance architecture that likely facilitated the rapid diffusion of the ‘innovation’ of using ‘cost-effectiveness’ analysis and evidence for such a purpose after William’s seminal paper in 1986 (12). Again, this can be tested.

The problem for the MDGs or indeed any subsequent targets in Global Health (and well-being) is therefore unlikely to be the lack of any particular form of evidence or narrative, or the ability to spread that evidence through and across international public health networks and related goods and services professional (interest) networks, but rather the reliance on “discretionary” sovereign public budgets and therefore sovereign (sub-international) real resource solidarity networks.

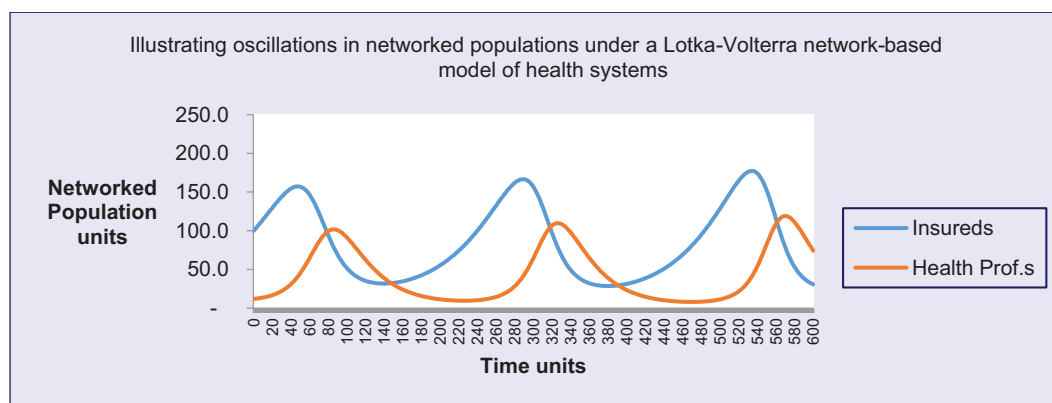


Figure 1. The ‘shark fins’ or cycles of social network expansion and decay under a Lotka-Volterra network-based model of health systems

In social network terms, networks of ‘homophilic’ global health and well-being solution suppliers relied on transferable real resources (‘finance’) from a clearly identifiable sub-set of resource solidarity networks for health and well-being (legally bound (‘strong tie’) ‘donor nations’) based purely on the ‘weak ties’ of temporary (programmatic) goodwill to enable them to manage those real resources within third party solidarity networks (‘recipient nations’). The risks (both in iatrogenic and financial terms) of this for both ‘donors’ and ‘recipients’ were clear from the start and yet tools and narratives to deal with such risks, and anticipate the shark, were largely neglected or ignored (13).

Physician, health thyself

Unsurprisingly perhaps, given their expertise in virology, international public health networks have been some of the most successful practitioners in the instrumental use of social networks over the last 15 (if not 150) years. Unlikely alliances and national and global “partnerships” encompassing everything from Big Pharma executives to grass roots humanitarian and religious activists now all strive toward the same goals, citing the same evidence and narratives. More evidence and understanding of how to foster social contagion may then help further “to build on success”. But if that success is not forth-coming, or indeed if reversals of fortune become apparent, how might that be explained?

The use of ‘cost-effectiveness’ as one of a number of narrative devices amongst (previously largely) self-organizing international public health related networks for (global) ‘resource mobilization’ through the MDGs—rather than a decision rule for resource rationing and risk management in sovereign health system and public finance contexts—therefore provides one of a number of means to track an epic experiment in Social Network Analysis (SNA), social contagion, and the diffusion of an ‘innovation’ in (public) health policy. The experiment also has a clear and approaching end date. But what is different in the 21st century with respect to such analysis however, is not as Karl suggests that human networks are new, on the contrary; nor that there will not be those who attempt to use social networks instrumentally, a foundation of political activity at any scale; but it is possible to trace and map network contacts and movements—‘social contagion’ and ‘social influencing’—electronically, at increasingly larger scale, more rapidly, and across increasing numbers of possible ties and links (14).

The hypothesis of a network-based theory of health systems is therefore a challenge to those international public health institutions and networks with the resources to perform such (computed) social network analyses to indeed do so; but first to test it on themselves, or better allow testing, and their own much-vaunted social contagion activities.

The results of any such future (almost certainly novel and trans-disciplinary) research are hard to predict, but network theory, and empirical results in SNA to date, suggest that innovations spread quickly through more simple and homophilic networks (15). The hierarchical networks of public integrated systems are therefore likely to be preferred by those who wish to use social networks instrumentally to ‘sell’ or ‘advocate’ products and policies. However, hierarchical networks are also characterized by higher degrees of network density and centrality; and therefore also linked, as Karl indeed indicates, to selectivity and also blocking (other) innovations.

But this is a challenge that global health networks cannot really afford to ignore; because the risks relate not only to ‘resource mobilization’ (public finance) crises, but also to being able to explain public health crises of past and future (16). Establishing links between actual health outcomes and the rise and fall of legally bound resource solidarity networks, and the exclusive health (services) supplier networks these fund, is then a second and more complex step; particularly given the relatively modest contribution of professional health services to aggregate the health status at population levels over the long term (17). Any link is likely to be only further complicated where, as for example in parts of the former Soviet Union and Yugoslavia, the collapse of resource solidarity networks is accompanied by significant social dislocation and in some cases extreme communitarian violence.

The limitations to SNA in international health therefore seem largely self-imposed, because the real question of paper, and proposals to address it, remains unanswered; Not, ‘How to facilitate social contagion?’ but, ‘What are the limits?’.

Finally, the hypothesis suggested to answer this question and subsequently commented but not addressed also suggests a line of enquiry towards Karl’s final question and network “performance”. Hierarchical homophilic networks will be ‘powerful’ instruments of social contagion, but two types of ideas and innovations are likely to prove more ‘resilient’; innovations and ideas for improving health and well-being that require few or no real resources, and; innovations and ideas that can help those involved in health and well-being activities that do require intensive amounts of real resources to identify and deal with ‘risk’—or the inevitable possibility given imperfect foresight, that any future outcomes may exceed or disappoint against current expectations. The first involves removing the factor that creates the sharks, the second involves accepting the inevitability of sharks, and focusing on attempts to anticipate (however uncertainly) their future movements and prepare counter-measures.

Conclusion: to jump sharks do not just think; believe.

The fewer real resources cells and nodes of a network needs to survive, and the more self-organizing these become, the more resilient the networks they constitute and ideas they can diffuse. In a world of increasingly high-tech capital intensive health and well-being activities, examples of innovations (and networks) that require few or no (community) real resources to promote human health, seem almost an anathema. But they are more common and more culturally diverse and adaptive, than might at first be assumed; their age evidence of their continued effectiveness and relevance. (Social Enterprise) Networks of those supporting the ‘co-production’ of health through, particularly immaterial, rituals of individual and group healthy lifestyles and behaviours would therefore seem to provide a clear alternative (complementary) strategy to improving public health and well-being at large scale over long time periods (18, 19). No occasional giant leaps in public health and well-being perhaps, but billions of tiny daily contributions will also add up substantially.

With respect to ideas and innovations to anticipate and manage return/risk variances, examples are more difficult to identify. Particularly in (international) public health, where a very constrained set of tools and ideas in economics and finance typically stem from the persistent use of WHO definitions of

(health) ‘finance’ as simply ‘resource mobilization’ (20). Given finance and economics are those applied and theoretical fields most centrally concerned with (individual, organisational and societal) real resource use and decision-making under uncertainty, this constraint is likely to be a significant brake on innovative ideas for identifying and dealing with that (future) ‘risk’ of variance against expectations. There will be no plans ‘B’ and no hedges, only either irrational exuberance or denial and anger after the fact. Abuse targeted at the tactical risk management tools and narratives in (public) finance and economics in public health might therefore be misplaced if not misguided, and reflective of failures prepare for the probability of sharks springing out of seemingly calm seas (21).

In a world, where the only certain future outcomes are death and taxes, the challenge and opportunities of SNA would seem to lie therefore; not so much in the further refinement of well-used tactical instruments in international public health; but in starting to understand the strategic contexts in which such tactics are employed. Much will depend on the time scale of events observed for analysis, and the lessons taken from reversals of fortune (22). Ultimately, however, in the long-term, pluralized and distributed health and well-being system networks and architectures would seem to offer a credible and proven alternative to ‘integrated’ approaches to health system governance. An alternative that might be preferred not only by cold-blooded economists, epidemiologists and information scientists focusing on managing dangerously accumulating ‘too big to fail’ community risk; but also by passionate, culturally and linguistically diverse aesthetes who join together in local self-organizing networks to perform simple daily rituals and activities to promote their own and direct community physical and mental health and well-being.

Ethical issues

Not applicable.

Competing interests

The author declares that he has no competing interests.

Author's contribution

MGR is the single author of the manuscript.

References

- Rhodes MG. A network based theory of health systems and cycles of well-being. *International Journal of Health Policy and Management* 2013; 1: 7–17.
- Blanchet K. Governance of health systems; comment on “A network based theory of health systems and cycles of well-Being”. *International Journal of Health Policy and Management* 2013; 1: 177–9.
- Blanchet K. How to facilitate social contagion? *International Journal of Health Policy and Management* 2013; 1: 189–92.
- Chen A. Facebook viral marketing: When and why do apps “jump the shark?” [internet]. Available from: <http://andrewchen.co/2008/03/05/facebook-viral-marketing-when-and-why-do-apps-jump-the-shark/>
- Coleman J, Katz E, Menzel H. The Diffusion of an Innovation among Physicians. *Sociometry* 1957; 20: 253–70.
- Piot P, Feachem RG, Lee JW, Wolfensohn JD. Public health. A global response to AIDS: lessons learned, next steps. *Science* 2004; 304: 1909–10.
- Institute of Health Metrics and Evaluation. Financing Global Health 2012: The End of the Golden Age? [internet]. 2012. Available from <http://www.healthmetricsandevaluation.org/publications/policy-report/financing-global-health-2012-end-golden-age>
- Katz IT, Bassett IV, Wright AA. PEPFAR in transition--implications for HIV care in South Africa. *N Engl J Med* 2013; 369: 1385–7.
- Frenk J. Governance Challenges in Global Health. *N Engl J Med* 2013; 368: 936–42.
- Drummond M, O'Brien B, Stoddart G, Torrance G. *Methods for the Economic Evaluation of Health Care Programmes*. Oxford: Medical Publications; 1997.
- Ham C. Priority setting in health care: learning from international experience. *Health Policy* 1997; 42: 49–66.
- Williams A. Economics of coronary artery bypass grafting. *Br Med J (Clin Res Ed)* 1985; 291: 326–9.
- Over M. Prevention Failure: The Ballooning Entitlement Burden of U.S. Global AIDS Treatment Spending and What to Do About It - Working Paper 144 [internet]. 2008. Available from: <http://www.cgdev.org/publication/prevention-failure-ballooning-entitlement-burden-us-global-aids-treatment-spending-and>
- Anagnostopoulos A, Kumar R, Mahdian M. Influence and Correlation in Social Networks. Proceedings of the 14th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD). Las Vegas: ACM; August 2008.
- Weng L, Menczer F, Ahn YY. Virality Prediction and Community Structure in Social Networks. *Scientific Reports* 2013; 3: 2522.
- Arrow KJ. Uncertainty and the welfare economics of medical care. 1963. *Bull World Health Organ* 2004; 82: 141–9.
- Glouberman S, Millar J. Evolution of the Determinants of Health, Health Policy, and Health Information Systems in Canada. *Am J Public Health* 2003; 93: 388–92.
- Duhl L. *The social entrepreneurship of change*. New York: Pace University Press; 1990.
- NHS. Co-production for health: a new model for a radically new world [internet]. 2011. Available from: www.sph.nhs.uk/sph-documents/local-government-colloquium-report
- WHO. *Everybody's business. Strengthening health systems to improve health outcomes*. Geneva: WHO; 2007.
- Parkin D, Appleby J, Maynard A. Economics: the biggest fraud ever perpetrated on the world? *Lancet* 2013; 382: e11–5.
- North DC, Wallis JJ, Weingast BR. A Conceptual Framework for Interpreting Recorded Human History [internet]. 2006. Available from: <http://www.nber.org/papers/w12795>