

Managing Contagion: COVID-19, public health, and reflexive behavior

*Gerenciando o contágio: Covid-19, saúde pública
e comportamento reflexivo*

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RESUMO: Este artigo caracteriza uma pandemia como um tipo de contágio e descreve um contágio como um sistema de *feedback* reflexivo de dois níveis e duas direções. Nesse sistema, as opiniões de especialistas para gerenciar uma pandemia podem atuar como profecias autorrealizáveis devido à forma como influenciam a formação de crenças coletivas. No entanto, quando vários especialistas produzem várias opiniões de especialistas que atuam como profecias autorrealizáveis, isso pode fragmentar a resposta de uma sociedade a uma pandemia, piorando-a em vez de melhorá-la. Este artigo modela esse possível resultado distinguindo duas opiniões de especialistas concorrentes, apelando, respectivamente, para pessoas em situações de seguro de emprego/saúde do tipo bem comum e de *pool* comum, e argumenta que, para combater a fragmentação de opinião sobre como lidar com uma pandemia, as políticas de saúde pública precisam atender à natureza do raciocínio público. Argumenta que isso implica perguntar como as instituições deliberativas justas e legítimas podem funcionar de maneira “inclusiva e não coercitiva” que permita à sociedade reconciliar visões concorrentes sobre como combater crises em todo o sistema, como pandemias.

PALAVRAS-CHAVE: COVID-19; contágio; profecia auto realizável; saúde pública; especialistas; bens de interesse social; *pool* de bens comuns; raciocínio público, estigmatização; não coercitivo; sociedade decente.

ABSTRACT: This paper characterizes a pandemic as a kind of contagion, and describes a contagion as a two-level, two-direction, reflexive feedback loop system. In such a system, expert opinions for managing a pandemic can act as self-fulfilling prophecies due to how they influence collective belief formation. However, when multiple experts produce multiple expert opinions that act as self-fulfilling prophecies, this can fragment a society’s response to a pandemic, worsening rather than ameliorating it. This paper models this possible outcome by distinguishing two competing expert opinions, appealing respectively to people in club good and common pool types of employment/health insurance situations, and argues that

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to combat fragmentation of opinion about how to address a pandemic, public health policy needs to attend to the nature of public reasoning. It argues this entails asking how just and legitimate deliberative institutions can function in an ‘inclusive and noncoercive’ way that allows society to reconcile competing visions regarding how to combat system-wide crises such as pandemics.

KEYWORDS: COVID-19; contagion; self-fulfilling prophecy; public health; experts; club goods; common pool goods; public reasoning, stigmatization; noncoercive; decent society.
JEL Classification: A13; H41; H70; I100.

INTRODUCTION: THE PROBLEM OF MULTIPLE EXPERTS IN A PANDEMIC

The COVID-19 pandemic introduces new issues and questions into economics regarding public health. To introduce them, this paper first reviews Roger Koppl’s expert paradox, and then discusses the role expert opinion plays in the special circumstances of a society-wide pandemic. It characterizes pandemics as contagions, and defines a contagion as a two-level, two-direction, reflexive feedback loop system operating between individual and collective beliefs. In a pandemic, experts can become especially influential should their recommendations act as self-fulfilling prophecies that change collective beliefs. They then have the potential to change people’s behavior in ways that can affect for better or for worse how a society manages a pandemic.

This problem is compounded by another. Experts are said to generate public goods by creating knowledge that can be widely shared. This understanding derives from economics’ standard taxonomy of goods which defines public goods as generally non-excludable and non-rivalrous. Suppose, however, that expertise is contested, and different experts disagree. Then competition among experts can create competing ideas of the public good if different groups of people rely on different experts. This can in turn lead to competing self-fulfilling prophecies as different expert visions become embedded in different groups of people, undermining a society’s ability to produce a shared public good.

Economics’ goods taxonomy allows for competing public goods in the form of ‘club’ goods (also termed local public goods). Whereas public goods in the standard sense are generally non-excludable and non-rivalrous, club goods/local public goods are excludable and non-rivalrous only for different groups of people. This means that a kind of ‘public’ good provision can be achieved whereby different social groups provide public-like goods to themselves to the exclusion of other social groups.

But which such goods should different groups provide themselves? Groups’ own experts can provide guidance using the standard public goods meaning of non-excludable and non-rivalrous, which effectively applies to individual groups once society is redefined as their social group. The existence of other social groups

and other experts then becomes essentially irrelevant. Nonetheless, a contagion process as in a pandemic works across social groups so any one group's adopted behaviors have effects on other social groups. Expertise and its behavioral uptake may be segregated by social group but a contagion by nature travels across social groups.

What is the solution to this enlarged expertise problem? I argue that it calls for attending to the nature of public reasoning regarding the shared social good. A society's ability to address pandemics such as COVID-19 and other society-wide crises then depends on whether it is seen as just and legitimate where this requires that it be socially 'inclusive and noncoercive.' Consequently, how a society combats these challenges depends importantly upon the underlying normative issues associated with the practical rules and institutional arrangements that societies adopt in developing their public reasoning processes.

Second section reviews Koppl's expert failure problem. Third Section models contagions as a two-level, two-direction reflexive social process. Fourth Section describes how self-fulfilling prophecies work and applies this to Koppl's expert failure problem. Fifth Section reviews economics' distinction between club goods and common pool goods. Sixth Section returns to COVID-19, develops a simple model of two pairs of possible responses to 'experts' according to whether people occupy club good or common pool type employment and health insurance circumstances, and argues that taken together these two responses to 'experts' can work to spread rather than reduce a disease. Seventh Section shifts to the topic of public reasoning, and using a discourse approach to ethics and politics, as associated with Jürgen Habermas' thinking, argues that the two main 'success conditions' for a deliberative public reasoning process to be just and legitimate are that it be seen as inclusive and noncoercive. Eighth Section comments briefly on the normative foundation of this conception of public reasoning, expertise, and suggests it might be anchored in Avishai Margalit's idea of a 'decent society.'

KOPPL'S PARADOX

Koppl's expert problem reflects the nature of knowledge in a world in which there exists a high division of labor (Koppl, 2018). When in this world knowledge becomes specialized on some subject, only some individuals master it and speak with authority about it. The responsibility that accompanies their knowledge, when it functions as a public good, is to use it for the advantage of the general public, but there is always a risk is that experts will use that knowledge to promote their individual advantage or private views. He characterizes this as 'expert failure.' In many circumstances, this may not have serious consequences. Competition among experts may net out these effects without having serious adverse consequences for society. Societies also institutionalize various evaluation mechanisms and practices to assess expert opinion (Boumans, 2015). Yet even then there is no guarantee that expert knowledge will work to the advantage of the general public.

Consider the pandemic and public health expertise. Experts possess specialized knowledge regarding disease transmission and public health measures needed to control it. Yet, specialized knowledge is not uniform across experts, and experts often disagree regarding how differences between them should be judged. How debate and disagreement across experts works out, accordingly, does not guarantee that the best opinions are adopted. This does not mean that expertise should be ignored or that expert knowledge in the case of the current pandemic has been mistaken or misguided. Rather Koppl's puzzle should alert us to the fact that when society most needs experts to manage their relatively unique knowledge in the general interest, there is no 'royal road' to doing so. Experts are fallible and can end up recommending measures that turn out to have been mistaken despite their best intentions. Thus, Koppl tells us, our dilemma is that we ought to "value expertise" but we also need to "fear expert power" (Koppl, 2018, 237).

Koppl frames his paradox in terms of personal virtues and vices. Experts can and often exercise humility regarding their special positions. The proper source of that humility lies in the expert knowing that specialized knowledge is by nature narrow in scope and thus limited in how much it tells us about the wider world. Koppl's worry, then, takes on special added weight when a society is affected by events whose proportions are systemic, such as the current pandemic. Then expert failure may not be only local in its effects but also do serious damage to the general public. In the next section I model events of this scale and nature as a particular type of social process and apply this analysis to the idea of a contagion.

CONTAGIONS AS A TWO-LEVEL, TWO-DIRECTION REFLEXIVE SOCIAL PROCESS

Contagions are a well-known phenomenon that afflict societies not only in the domain of public health but also in such domains as culture and politics. In the case of the last, think of the crowds and massive adulation that greeted Adolph Hitler in June 1940 on his arrival at Anhalter train station in Berlin after the fall of Paris. Think of the great crowds of adults and children who attended public celebrations of torture and lynching of African Americans in the U.S. Jim Crow period, proudly sending pictures and postcards of these killings to their friends. The scale and horror of these sorts of events tells us that social interaction can take on proportions that exceed and transcend interactions between people that occur largely at the individual level. They occur at crowd levels, and what occurs there feeds back upon and transforms interaction between people at the individual level.

Consider, then, how a pandemic operates as a type of a contagion. A pandemic has been defined as "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people" (Last, 2001). What thus characterizes a pandemic as a type of contagion is how a disease spreads across large numbers of people through their individual contact and interaction with one another. This spreading, or a disease's transmission

across people, proceeds not only on a one-by-one basis but across groups of people and then across society as a whole somehow via the mechanism of their one-by-one interaction. We can accordingly say that a pandemic as a contagion phenomenon is a special or perhaps exceptional form of one-by-one interaction that may act upon itself and transform how that interaction occurs. A contagion is a transmission of something – a disease, a taste, norms, habits, a practice, political values, etc. – which acquires social effects over and above its person-level manifestation in virtue of how it travels across people through their contact and interaction.

This sort of two-direction, two-level feedback loop sort of system was modeled by Herbert Simon in his general characterization of a complex system, where “a complex system [...] [is] one made up of a large number of parts that interact in a nonsimple way” (Simon, 1962, 468). When structurally broken down, the system has the following components:

- people’s one-by-one interaction feeds forward on and affects their shared circumstances;
- changes in their shared circumstances feed backward on and affect their individual circumstances;
- changes in their individual circumstances then alter their one-by-one interaction;
- this again ‘feeds forward’ to affect the nature of their shared circumstances;
- this process continuously repeats itself until something intervenes to bring it to a halt.

The two levels are the one-by-one interaction and people’s shared circumstances. The two directions are how the former feeds forward upon the latter, and then the latter feeds backward upon the former. The reason for calling this a single system is that the feed forward/feed backward actions are connected in such a way as to link the two levels in a recurring loop of mutual effects (that is, ‘endogenizing’ them to one another). The system is complex in that multiple factors on different levels operate upon one another at the same time. I characterize this overall two-direction process as reflexive in using the meaning of reflexivity as where something acts upon itself.

We might say that all individual interactive systems display this reflexive dynamic in some degree, but in many cases the feedback from shared circumstances to one-by-one interaction does not significantly modify that interaction. For example, while markets evolve, particular markets also often show relative stability and maintain a given form over time. Whether a system exhibits a changing dynamic then depends in part on how we judge the strength of the relevant feedback effects and how consequently the functioning of the system as a whole is altered. In the case of the COVID-19 pandemic, that judgment is based on significantly higher levels of morbidity and mortality and on worsened economic well-being in both individual and economy-wide ways.

Stephen Davies (2020) shows how pandemics are different from more common localized epidemics and describes this difference in terms of three phases pandem-

ics go through. First there is the spreading phase, historically often along trading routes, second, a ‘smouldering’ phase when local outbreaks begin to interact and build upon one another. A third phase is when there is an accelerating spread of a disease with a wider and more uniform dispersal across different areas. Following this progression, a disease may decline or instead go through additional waves depending on how natural forces and social intervention proceed.

A natural type of escape from its continuation is where herd immunity develops when “the number of susceptible people in a given population is at a level where one case will give rise to fewer than one new case, because of the physical difficulty of finding a vulnerable person” (Davies, 2020, 133). In economics and marketing science, models of innovation replicate this pattern when a rise in a given population of ‘adopters’ of something new is followed by fall in remaining possible ‘adopters’ as there are fewer and fewer possible ‘adopters’ left out of a given population. When this latter number falls to a low level, the innovation is standardized and ceases to be an ‘innovation’ (Rogers, 1962, 2003). Similarly, when there are few people remaining who have not been infected by a disease, herd immunity is achieved, and the disease ceases to have pandemic status. Frank Bass formalized and generalized Rogers’ model in developing the widely employed Bass innovation diffusion curve (Bass, 1969).

In the case of public health, however, attaining herd immunity usually does not come about simply in this natural sort of way since societies typically intervene in pandemics through public health measures meant to alter the course of a disease. How populations respond to these measures removes the more deterministic sort of pathway many innovations follow, as we have seen in the case of COVID-19 in terms of the different ways in which people have responded to public health measures. Here, then, innovation modelling is limited in what it can tell us since it is only framed in terms of the changing proportion of adopters to non-adopters.

Innovation modeling also misses something else that people’s response to public health measures may bring about – something we seem to have seen in the case of COVID-19 – namely, that the popular uptake of public health measures can change people’s beliefs regarding the efficacy of experts’ special knowledge, affecting their power and ability to influence public health. That is, innovation modeling also needs a micro level analysis that acts together with and can modify its macro level adjustment process. In reflexivity terms, there are circumstances in which shared judgements across a population regarding public health recommendations feedback and act on how people interact on a one-by-one basis, and that can change individual behavior at the interaction level for better or for worse. I describe this uptake mechanism in terms of the self-fulfilling prophecy mechanism.

SELF-FULFILLING PROPHECIES

A classic modern example of a self-fulfilling prophecy is Robert Merton’s bank run (Merton, 1948). An expert publishes a report saying a bank is insolvent though

that is in fact false. Nonetheless, depositors hear of the report, trust the expert's knowledge, withdraw their funds from the bank, the bank then fails, and it becomes true that the bank is insolvent. What occurs can be called a belief reversal and a consequent change in what is taken to be true (Davis, 2020). In terms of the two-direction, two-level feedback loop system above, when the expert expresses an opinion – a type of external shock – the one-by-one interaction between the bank and depositors tips into a bank run, this signals that the bank may fail, this feeds back on remaining depositors causing them to also withdraw their funds, and the bank indeed fails. At that point the contagion in Merton's example comes to an end, though if one bank's failure creates doubts about other banks, then a run on many banks is possible.

This spreading of a contagion across banks in fact is what happened in the 2007-2008 financial crisis. In the early years of the decade, banks developed a new basis for mortgage finance in the form of mortgage-backed securities that they constructed and sold to various investors. They were successful in this practice for a number of years, and thus, at least for a time, they were solvent. However, financial experts began to criticize this system as unstable, and some traders began to short mortgage-backed securities. Lehman Brothers was the first bank to be subject to close scrutiny, and the first to suffer a stop in its external funding and a breakdown in its one-by-one bank-funders relation. This changed not only the bank's status but also signaled that all banks involved in mortgage-backed finance were at risk. Thus, funding for many of them was withdrawn as well, the contagion spread, and virtually the entire U.S. banking system would have become insolvent had there not been the government rescue plan that began with Bear Stearns.

What Merton and the financial crisis demonstrate, then, is that in a two-level feedback loop system experts' opinion can take on wider significance and influence the entire set of interactions among individuals. This same dynamic, then, has occurred in the case of COVID-19. Health systems, like banking systems, are built around sets of one-by-one interactions between people in need of health care and health care providers. Yet in the extreme circumstances of a pandemic expert opinion may emerge from many sources, and should one set of experts' opinions gain particular influence, they may act as self-fulfilling prophecies changing the system in place meant to deal with disease transmission.

Suppose, then, that the system in place at a given time involves good public health disease management (testing, mask wearing, hand washing, social distancing, contact tracing, etc.), but doubts expressed about it cause people to distrust its recommendations, change their practices, and the effect of this is to worsen how well the disease is managed based on those strategies. Then what was true, that the system worked effectively, becomes false because it no longer succeeds in managing the disease – another case of a belief reversal and change in what is true. The worsening of the disease then has the potential to erode trust in the overall public health system much just as in the way the financial crisis the funding stop banks suffered threatened belief in their solvency. In effect, the public health system is bankrupted, and rather than halting disease transmission we see additional waves of infections.

That in two-level reflexive feedback systems these sorts of outcomes can occur reflects a further dimension expert opinion possesses. Expert opinion depends on mastery of specialized knowledge which I noted above is always fallible. Koppl thus recommends we be aware of the risk of expert failure and that experts may make mistakes. They themselves should be humble about their abilities. Yet at the same time because expert knowledge is specialized, non-experts are not in a position to judge when experts are mistaken, even if people are skeptical about expert knowledge. This thus becomes an especially serious problem in the extreme circumstances of a contagion that works society-wide. Then the need to judge expert opinion increases without commensurate increases in our abilities to judge it. That is, the knowledge-trust gap increases according to the greater importance of that knowledge.

Broadly, we can imagine two kinds of reactions that can result: the opinions of some experts may be amplified and the opinions of others may be disregarded. The amplified opinions people act upon function as self-fulfilling prophecies in that increasing belief in them works to confirm those opinions. These opinions then crowd out other expert opinions that are consequently disregarded.

Koppl's expert failure problem is consequently not just an individual problem but also a social problem. Indeed, experts may admirably manage the individual virtues and vices their special positions involve, but still find themselves, perhaps surprisingly even to themselves, the authors of self-fulfilling prophecies that may do much damage. (A famous example is J. Robert Oppenheimer, known as 'father of the atomic bomb,' who later in life deeply regretted his role in developing the bomb). This complicates a normative interpretation of the expert problem when framed primarily in individual terms. How, then, might we need to expand our normative perspective to address this?

Prior to turning to this issue, the next section turns to what expert knowledge is said to produce, namely, public goods. The problem here is that when people's ability to judge expert opinion is limited, and it is difficult to determine whether one expert's opinion is superior to another's, people may choose to follow different experts. This can then lead to multiple competing experts who produce multiple competing public goods. How can there be multiple competing public goods if public goods are generally non-excludable and non-rivalrous?

THE POLITICAL ECONOMY OF ECONOMICS' GOODS TAXONOMY

In the standard taxonomy of goods, goods are classified according to the degree to which they possess two characteristics: excludability and rivalrousness (Musgrave, 1959). Consider the category of private goods, the opposite of public goods. The excludability characteristic refers to the degree to which access to their use can be limited to some individuals. Thus, ownership of a private residence gives owners of that residence the ability to determine who makes use of it, so excludability is high. The rivalrousness characteristic refers to the degree to which a good's use can be shared by different individuals if they have access to it. For example, food can

only be used by single individuals because its consumption uses it up, so rivalrousness is high.

A public good is defined as a good that possesses low degrees of excludability and rivalrousness. Public playgrounds are generally open to and can be used by many people at the same time, so both excludability and rivalrousness are low. Whereas private goods are secured by private property laws, public goods are usually provided by governments. Considerable attention in economics, then, is traditionally directed at the relationship between public goods and private goods, since they are directly opposed types of goods with quite different means of provision that take both excludability and rivalrousness to extremes.

Yet this emphasis on the private-public goods dichotomy neglects how the nature of goods is institutionally contingent (Furton and Martin, 2019; Rayamajhee and Paniagua, 2020). One way to capture this while retaining the standard goods taxonomy is to note that in addition to these polar opposite cases there are also two mixed cases in the standard goods taxonomy in which one characteristic operates to a high degree and the other to a low degree. These two mixed cases are also polar opposites but differentiated according to social and institutional circumstances.

One of these two cases is where goods exhibit high degrees of excludability, just like private goods, but low degrees of rivalrousness, just like public goods, when those goods are provided to only certain groups of people. These goods were originally labeled 'club' goods, because they are easily associated with clubs of all kinds (Buchanan, 1965; cf. Marciano, 2021), but they are now also referred to as local public goods. Examples of clubs, then, are common. Membership entitles one to the use of whatever facilities the club offers, as in a sports club. Examples of local public goods are what city and local governments provide only to residents, such as schools, parks, community centers, etc.

Opposite to this case are goods that exhibit low degrees of excludability and high degrees of rivalrousness (Ostrom, 1990), and vary in their institutional nature (Aligica, 2014; Rayamajhee and Paniagua, 2020). These are common pool resource type goods to which everyone has full access and where people's use of those resources ultimately depletes them – a tragedy of the commons type situation (Hardin, 1968). Examples are natural resources like fisheries, shared animal grazing lands, and the atmosphere itself. Non-natural examples are urban environment amenities and the internet which open access can potentially destroy.

The full taxonomy of goods economists employ, then, is represented in the familiar Table 1, which is useful in allowing us to compare two contrasting axes: the private goods-public goods axis on the northwest-southeast diagonal, and the club goods-common pool goods axis on the southwest-northeast diagonal.

Table 1: Standard taxonomy of goods

Goods characteristics	Excludable	Non-Excludable
Rivalrous	Private goods	Common pool goods
Non-rivalrous	Club/local public goods	Public goods

The paired types of goods on the two different axes, then, function as opposites of one another for different political economic reasons. The private goods-public goods axis – the more familiar opposition – is based on the differences and tensions among individuals’ independent, free activity and government direction and control of that activity. The club/local public goods-common pool goods axis – the less familiar opposition – is based on the capacity of some groups to exclude certain economic and social activities from other groups versus a space in which exclusionary practices generally do not exist and a kind of Hobbesian war of all against all prevails.

The two pairs of opposed goods also differ in another important respect. Whereas in the private goods-public goods case there is considerable debate over where the boundary between the two should fall, there is little doubt that both types of good provision will continue to exist. However, in the case of the club/local public goods-common pool goods opposition it seems unclear how sustainable the world is when some social groups enjoy the security of excluding others, and other groups lack stable livelihoods, and many individuals are at risk of not surviving.

Elinor Ostrom’s strategy was to introduce political governance strategies for common types of circumstances whereby people might secure more stable livelihoods. Local political organization and cooperative relationships would work much like more formal governmental institutions, though in a bottom-up rather than top-down way. However, the world we live in does not seem to be following Ostrom’s pathway very well since commons-type settings continue to characterize the lives of many people. Thus, it remains unclear how sustainable the world is when shock events such as the pandemic test societies’ cohesiveness.

DIFFERENT UPTAKES OF EXPERT/’EXPERT’ OPINION IN THE CASE OF COVID-19

What might the club/local public goods-common pool goods opposition tell us about the evolution of public opinion in the case of Covid-19? In a pandemic people are under great pressure to determine what reliable expert knowledge is, and lacking much to guide their thinking, they may amplify some experts’ opinions and disregard those of others. Koppl’s analysis, then, allows that people may identify as ‘expert’ individuals who lack actual expertise but are perceived to know who is expert. Thus, influential national figures, such as government leaders, in times of crisis may function as ‘experts’ or as acceptable surrogates for experts. If actual

experts, because their knowledge is highly specialized carry relatively little influence, these ‘experts’ then take their place. Further, since political leaders not in power are also socially influential, political oppositions in a society can work to produce additional, competing ‘expert’ opinions.

Now consider how self-fulfilling prophecies acquire their momentum. What needs to be added to the basic idea of a self-fulfilling prophecy as a mechanism is how an adopted opinion spreads and becomes socially authoritative. That is, for an opinion to become a self-reinforcing process of collective belief formation, something needs to sustain a chain reaction across individuals that increases its plausibility in public discourse. One way to explain this is through the idea of ‘informational and reputational’ cascades (Kuran and Sunstein, 1999). Informational cascades occur when people have incomplete personal information, and “base their own beliefs on the apparent beliefs of others” (Ibid., 686). Reputational cascades occur when people are motivated by social approval or disapproval and “take to speaking and acting as if they share ... what they view as the dominant belief” (Ibid., 686-7).

Thus, to see how there can be competing self-fulfilling prophecies, note that in many countries the pandemic has had particularly severe economic and health effects on some social groups and had relatively modest economic and health effects on others. An important factor involved is whether individuals have been able to work remotely from the relatively safety of home or need to work in socially congested work settings. The former, then, effectively occupy a club-like employment situation since remote employment opportunities are limited – an employment exclusion – which moreover sustains higher wages by limiting competition over those jobs – a non-rivalrous wage determination. By comparison, the latter effectively occupy a common pool-like employment situation since there is wide-open competition for their jobs – a low employment excludability – which also works to keep their wages low – a rivalrous wage determination.

A further difference between these two social groups is that people able to work remotely often have reasonably good health insurance, while people unable to work remotely often have poor health insurance (if any). When club-like employment situations limit job competition, one way they sustain higher wages is through more generous fringe benefit compensation, including good health insurance. In contrast, in common pool-like employment situations that job competition is wide-open usually means fringe benefit compensation, including health insurance, is negligible. Thus, the two levels of health protections against the pandemic correspond to the club-like employment common pool-like employment situations. These two sets of circumstances then tell us which ‘experts’ the two social groups are likely to trust.

First, social groups with remote employment and good health insurance are likely to believe they are well protected against the disease and are likely to take as ‘expert’ opinion the view that they need place little emphasis on recommendations of public health officials who prioritize public health strategies (masking, distancing, etc.). The ‘expert’ opinion they amplify is that of political leaders who, concerned they will be blamed for the pandemic, downplay public health experts. These favored

‘expert’ opinions then can work like self-fulfilling prophecies and crowd out the disfavored the genuinely expert opinions of public health officials.

Second, for people in the common pool employment situations with little or no health insurance, they realize they have little choice but to continue working even if it puts them at risk of exposure to the virus. Without health insurance they simply take time off from work when infected and return as soon as possible. The ‘expert’ opinion they then amplify is also that of political leaders who say it is important to keep the economy going. The expert opinions of public health officials who recommend such strategies as social distancing and shutdowns, etc. accordingly tend to be crowded out and disregarded.

Thus, while the circumstances and motivations of the two groups are different, and political leaders communicate with them differently, they nonetheless respond favorably to the same ‘expert’ opinion. Table 2 summarizes the responses for these two groups as they apply to club or common pool type employment-insurance situations.

Table 2: Responses to ‘experts’ and experts

Employment-insurance situation	‘Expert’ opinions amplified	Expert opinions disregarded
Club	Political leaders	Public health officials
Common pool	Political leaders	Public health officials

In both cases, ‘expert’ opinion is formulated in one-by-one individual interaction terms – e.g., ‘you need not take any special health precautions’ – as if this bottom-up focus had no system-wide effects on public health. Yet if these opinions are adopted in both social groups, via informational and reputational cascades, they can become collective beliefs with system-wide effects and act as self-fulfilling prophecies that together work against reducing disease transmission.

In contrast, public health officials’ expert opinions that might limit disease transmission are conceptualized first in terms of how pandemics operate across entire populations and are then formulated from this top-down perspective to apply to people’s one-by-one individual interaction so as to be consistent with the disease’s system-wide behavior. That is, the strategy for managing contagion is to manage collective belief formation with a full understanding of a pandemic as a two-level, two-direction reflexive social process. However, this more indirect appeal to individuals is easily disregarded in comparison to what ‘experts’ one-by-one level recommendations.

Given this, what seems called for is that we move beyond one-level analysis to a complex system thinking about health in order to address how people in entire communities can manage society-wide health problems. I suggest that the political economic foundations for doing this involves giving greater attention to the nature of public reasoning.

THE NATURE OF PUBLIC REASONING

Public reasoning can be understood as confronting the following challenge:

The central question [...] is how to guarantee that rules and institutions [of a society] reflect the shared interests of its constituents and respect their autonomy, i.e., remain neutral vis-à-vis the plurality of citizens' conceptions of the good (Colin-Jaeger, Dold and Gascoin, 2020, 2).

In principle, what will “guarantee that rules and institutions reflect the shared interests of its constituents and respect their autonomy” is that they are seen as just and legitimate because they have been established by some broadly accepted process of agreement. Yet what does agreement involve between people who may have very different concepts of what is good?

When people are solely motivated by their individual interests, it is difficult to see how they can reach agreements regarding a society's rules and institutions. Thus, rather than focus on reconciling people's different interests, the task of establishing agreements regarding a society's rules and institutions should be conceptualized as a matter of establishing reasons for them (Korsgaard, 1996). Reasons, in principle, are accessible and intelligible to all individuals whatever their interests whether they agree with them. Reasons, potentially, transcend conflicts of interest. Thus, establishing shared, accepted rules and institutions arguably depends on the ability of people to exchange and debate reasons for adopting any given set of rules and institutions to which they might agree.

We can characterize a debate over reasons, then, as a process of public reasoning, and then ask ourselves under what conditions might it succeed in generating rules and institutions that are generally taken to be just and legitimate. I frame this as a matter of the ‘success conditions’ required of a public reasoning process. If people disagree over particular outcomes which a public reasoning process produces, at least they may be hoped to agree on broad conditions believed to be needed for that process to operate, on the assumption that those conditions themselves are seen as just and legitimate.

One proposal in this regard comes from Jürgen Habermas whose discourse approach to ethics and politics describes two main ‘success conditions’ an exchange and debate over reasons depends upon: a public reasoning process seen as just and legitimate must be both inclusive and noncoercive (Habermas, 1996; see Bohman and Rehg, 2017). Habermas' discourse approach, as well as those generally that emphasize how social deliberation underlies democracy, is highly idealized, and real-world democratic systems are subject to a variety of constraints and problems, such as group think, preference falsification, etc. However, idealized conceptions also have strong normative value in that they create standards to be pursued in open, democratic societies.

To interpret, then, this idea of what successful exchange and debate over reasons involves, particularly when some people occupy club goods type economic and

social locations and others occupy common pool goods type economic and social locations, I ask what do these two ‘success conditions’ require if people are to overcome their differences and engage in a successful public reasoning process seen as just and legitimate. Table 3 takes Habermas’ inclusiveness and noncoerciveness conditions, distinguishes macro and micro levels to which they respectively apply, as operate in the two-level, two-direction reflexive system conception described above, and then identifies the particular normative targets needed in each case. These two normative targets specify broadly when a just and legitimate public reasoning process succeeds in being inclusive and noncoercive. Though they operate on two different levels, they should be seen as reinforcing each other. When individual-to-individual interaction is noncoercive, particularly in the sense that people do not stigmatize others, a society builds system-wide inclusiveness. When a society builds inclusiveness, people are more likely to refrain from stigmatizing each other.

Table 3: A legitimate and just public reasoning process

Habermas condition	Level where applies	Type of process	Normative target
non-coerciveness	micro	one-by-one	stigmatization
inclusiveness	macro	system-wide	exclusion

Note that stigmatization generally works through social group identities – race, gender, religion, disability, etc. (Davis, 2015). Its effect is to place individuals stigmatized at a disadvantage in public reasoning processes such that their thinking, in their own view, does not carry the same weight as that of others not stigmatized. Social exclusion generally works through how entire societies are organized in terms of social group differences in opportunities and economic and well-being outcomes. What social exclusion does in a public reasoning process is remove some groups of people from participation such that their thinking lacks a voice.

Regarding COVID-19, then, and the division in many countries over expert/‘expert’ opinions regarding strategies to address it, consider how stigmatization and social exclusion affect public reasoning. Public reasoning is often associated with governmental bodies such as legislatures in which there is explicit exchange of views, but in open societies with active media of different kinds, educational institutions at different levels, community organizations including churches, civic groups, and neighbors and friends getting together, there also exists public reasoning which reflects and acts upon the more the more formal type of reasoning we see in governmental bodies. In all venues, then, to the extent that some people’s views are stigmatized and excluded, public reasoning and shared deliberation over response to the disease likely fails to take place. What could allow it to go forward is if debates over ‘expert’/expert opinion differences are kept open to people’s different

interests and views in broad exchanges over reasons underlying strategies for how to go about combating a pandemic.

People of course may debate when and whether these success conditions for an open public reasoning process hold. My emphasis on normative targets is based on the idea that it is easier to say when these conditions fail than to say when they hold – an idea associated with Karl Popper’s falsification thinking (Popper, 1959). People are generally quick to see when their voice and interest is manipulated or denied. Thus, if we are to defend the idea of an open, free society, what seems needed is that at all levels where public reasoning occurs, we attend to what can cause it to fail.

Recall Koppl’s expert paradox, which derives from uncertainty and human fallibility. The same, then, needs to be said about public reasoning. If there is no ‘royal road’ to what it successfully decides, its viability depends upon it being sustained, just as we will always need to rely on expertise, despite its difficulties and challenges. Thus, if there exist general conditions we ought to observe when we judge it, seeing public reasoning as successful also can be seen to depend on general conditions. From a political economy perspective and the goal of maintaining an open, free society, I argue this calls for defending non-coerciveness and inclusiveness in public reasoning irrespective of people’s social locations.

THE NORMATIVE SCOPE OF EXPERTISE AS APPLIES TO PUBLIC HEALTH

Koppl’s expert problem emphasizes experts’ virtues and vices. In light of their relative mastery of specialized knowledge in societies with developed divisions of labor, the burden falls primarily on individuals to find a balance between what they ought and ought not do. However, the normative scope of the expert problem is larger because apart from what experts do people in society also bear responsibility for how they use and misuse expert knowledge. That others are the users rather than the creators of expert knowledge still carries responsibilities. In effect, users of expert knowledge function as experts at a remove since the authority they may lend to expert/’expert’ opinions when it is difficult for people to judge gives those opinions authority they would not otherwise possess.

In large complex societies this can be understood in terms of the two-level, two-direction reflexive feedback systems that allows us to describe contagions whether of the health kind or cultural and political kinds. Experts’ opinions initially operate on the individual level, but they become collectively influential or not according to how others exaggerate or disregard them. When we factor in the phenomenon of a self-fulfilling prophecy and information and reputation cascades and recognize that societies may find themselves torn between multiple experts and strategies for combating social shocks such as pandemics, entire societies may find themselves seriously at risk for making those problems worse.

Thus, the normative challenges societies face operate on a large scale and are

more difficult to address than a virtue ethics approach suggests. Further, the normative challenges societies face in circumstances such as pandemics are not independent of political challenges they produce. A public reasoning process, then, is not just a management of people's different interests but also a social normative deliberation in which people judge what people's responsibilities are and how to balance these with overall social risks.

Table 3 is intended to provide one framework in which this wider structure of normative challenges might respond to not just an experts' division of labor but also social divisions of labor that contemporary societies possess. The normative targets there are pragmatic in nature. Their purpose as success conditions whose possible failure is their focus is to put up guard rails that might ensure that public reasoning and deliberation among people with different interests and views is possible, especially in conditions under which differences between people's economic and social circumstances may be significant.

Beyond pragmatism, we might ask for a deeper normative rationale for this view of deliberation and public reasoning, one which expresses some conception of social good that a viable public reasoning process seeks. One of the most powerful, I suggest, is the one advanced by Avishai Margalit in his 'decent society' conception. He defines a decent society as one whose rules and institutions do not humiliate its members and undermine individual dignity (Margalit, 1996). Margalit does not fill in the content of this social good but leaves it open. What the good or goods of a society ultimately are depends on the people who live in it, and no doubt change over time. In this regard, Margalit's ideal also expresses what an open, democratic conception of society involves, balancing freedom and individual dignity. Thus, if a viable public reasoning process is pragmatically a means to this normative end, we might say this sustaining that end is the means to people being able to engage in that process.

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