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Health Economics and Ethics and the Health Capability Paradigm

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ABSTRACT *Kenneth Arrow's seminal 1963 article "Uncertainty and the Welfare Economics of Medical Care," published in the American Economic Review, is widely regarded as the origin of health economics. The health economics field that has emerged in the subsequent 50 years has become a collection of market-based (demand for and supply of health goods and services) and non-market-based subjects. Despite a "broadening" of health economics to absorb ideas from other disciplines, the field has failed to pay adequate attention to ethics. Kenneth Arrow himself has called for greater attention to ethics in solving persistent health and health care problems for which economic tools are insufficient. The health capability paradigm is an attempt to integrate economic and ethical principles in an alternative analytical framework, enriching both health economics and ethics simultaneously. Social problems in health are so intractable that we must apply theoretical and empirical methods in both economics and ethics to analyse them. Health capability economics, as embodied in the health capability paradigm, offers a way forward.*

KEYWORDS: Health economics, Health capability paradigm, Economic theory, Bioethics, Health capability economics

Introduction

In his *American Economic Review* article, "Uncertainty and the Welfare Economics of Medical Care," Arrow (1963) argued that medical care differs from other topics in economics largely because of the uncertainty inherent in disease incidence and treatment efficacy. Medical care does not fit with the competitive model of supply and demand, which is foundational in economics for its descriptive value and its efficiency in allocating resources.

The First Optimality Theorem of economics asserts that an equilibrium reached through the competitive forces of commodities priced in the market is optimal because no other equilibrium will make all market participants better off. The pareto optimality principle—there is an equilibrium state in which no one can be made better off in utility or other welfare measures without making another person worse off—is a value judgment, not a

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positive assessment. Pareto optimality is the end goal of social achievement, and this objective defines sub-optimality. The interpersonal comparisons on which optimality assessments rest come from the competitive market in participants' willingness-to-accept (WTA) and willingness-to-pay (WTP), with prices as signalling devices. WTA and WTP depend, of course, on initial purchasing power, conceived as asset and skill ownership. Transferring purchasing power from the well to the sick, for example through health insurance, increases the demand for medical care and thus the price as well.

Several decades later, Greenwald and Stiglitz (1986) proved that when there are asymmetries in information—adverse selection, moral hazard, or incomplete markets, all of which obtain in health care markets—then the economy is not efficient or Pareto optimal. Actors do not take information costs into account, and there are interventions that can make some better off without making others worse off. Stiglitz continues to argue that there is no intellectual foundation, either theoretical or empirical, for the claim that economics requires getting markets right in health care (1991). Akerlof (1970) argued adverse selection is present in health insurance markets.

Rather Stiglitz (1989, 2012) asserts a strong role for government and believes the key question is how to design an appropriate set of health and health care institutions. He criticizes the US health care system because it is so inefficient and gets so little return on investment in contrast to other countries, a deficiency that cannot be explained by adverse selection (only sick people have come to America) or other deleterious American geographical or environmental conditions (Stiglitz 2012). Inefficient firms and institutions persist in health care and health insurance markets, contrary to standard economic theory predictions. Price distortions and rent seeking are major problems in a system with pervasive information asymmetries, and Stiglitz scorns public institutions for failing to address them (2012, 2013). Rather than assume market efficiency, Stiglitz argues, we need to start with the assumption that markets are not efficient, which fundamentally changes the analysis (2012).

Scholars have identified many other market failures in health, including imperfect competition (existence of oligopolies and monopolies, such as a few US insurance companies), failure to provide public goods (whose consumption by one person does not preclude consumption by another, such as medical information), non-marketability of health (health is not exchanged between consumers), lack of independence between supply and demand of health care, externalities, increasing returns to scale, and consumer irrationality.

Arrow (2012) has continued to argue that economic principles alone do not provide solutions to these and other health and health care problems, but that ethics and culture are necessary sources for principles to inform solutions. He argues that health and medicine are prone to “moral judgment” on multiple fronts. In the health care profession, an ethical sense of responsibility must guide conduct, rather than prices; traditional economic tools such as incentives for providers and consumers simply do not work. In society at large, where people's health is in the “public interest” and should be publicly financed, Arrow argues, insurance markets fall short. Ethical judgment is necessary because health care is not just a private good. Meeting people's needs requires developing a culture of ethics, accountability and efficiency in health and medicine (Arrow 2012).

Arguments from Arrow, health economics' founding father, might suffice to justify a greater integration of ethics and economics in health, but he is not alone in arguing for ethical principles in solving health economics problems. Stiglitz and Amartya Sen agree. Moreover, two of the primary health economics textbooks, *The Economics of Health and Health Care* (Folland, Goodman, and Stano 2013) and *The Handbook of Health Economics* (Culyer and Newhouse 2000) recognize the importance of ethical theory in health and health care, one of which states, “understanding what health care distribution is equitable and choosing what health care needs should be met in a society depends on ethical

theory” (Folland, Goodman, and Stano 2013, 385). At the same time, bioethics needs economic theory because we live in a world of scarce resources and “economic analysis is based on the premise that individuals must give up some of one resource in order to get some of another” (Folland, Goodman, and Stano 2013, 10). This economic principle of “opportunity costs” applies to health and health care and cost minimization and budget constraints affect every individual in every society. The economic concept of efficiency is a powerful idea and tool to aid society in understanding the underlying costs and benefits to various policy options. Moreover, production functions, involving several inputs, are important economic tools for health production. Thus, any systematic theory or framework of health must include both ethical and economic concepts and tools. This article analyses critical problems in economic theory and argues for an alternative theoretical framework, the health capability paradigm (HCP), which fundamentally differs in the type of reasoning it employs compared to traditional health economics approaches. This health capability economics, as embodied in the HCP, offers a way forward. In the HCP, central health capabilities are the capabilities to avoid premature death and escapable morbidity.

Economic Theory and Rational Behaviour¹

Rational behaviour is foundational to mainline economic theory. Standard theory suggests that a rational decision has three qualities: internal consistency of choice, maximization of objectives, and pursuit of self-interest.

Internal Consistency of Choice and Transitivity

There are several important analytical distinctions in internal consistency of choice theory. Being consistent in choice involves a mathematical structure of preferences based on binary relations. In making the best choice among S and R, the maximal choice is the set of elements for which a better element does not exist. The axioms of choice include reflexivity, completeness, and transitivity. In a binary choice between X and Y, standard theory assumes that the binary relationship determines all information about the choice function. In the *Foundations of Economic Analysis*, Samuelson (1947) defined preference as the binary relation that underlies consistent choice; the binary relation of preference is revealed through the consistency of choices taken. Revealed preference, along with the preference and choice relationship, is a building block of economic analysis.

But linking choice to preference as a behavioural assumption has limitations for understanding human behaviour more broadly and is a flawed basis for health economics. Choices in health and health care, either individual or social, cannot be represented by a transitive binary relation but rather have proved to be intransitive and even indifferent (e. g. a woman prefers not to have an epidural before labour (ex ante), prefers an epidural during labour, but after delivery states she does not prefer an epidural during her next delivery (ex post) or simply cannot decide on an epidural until she starts to have contractions in her next pregnancy). Indifference and intransitivity are particularly prevalent in health situations because people do not necessarily know their tastes for different health care goods and services and different health states over time.

Choice functions also require contraction consistency (a chosen alternative, X, must continue to be chosen even if the set of possible options from which X is chosen contracts) and expansion consistency (a chosen alternative, X, must continue to be chosen even if the set of possible options from which X is chosen expands). In global and domestic public health, these conditions ignore context. Contraction consistency implies that if I choose to vaccinate 15% of the world’s population when choosing vaccination policies for the world (a

larger set) then I would also choose to vaccinate 15% of the world's population when choosing vaccination policies for the city of Philadelphia (a smaller set in which vaccinating 50% of Philadelphians is an option). It may make perfect sense to choose to vaccinate 50% of Philadelphians born if the goal is to reduce infant mortality in Philadelphia (instead of choosing to vaccinate 15% of the world's population of children) but not if the goal is to reduce infant mortality worldwide. Another example would be for a person not to choose to be vaccinated for typhoid (X) when choosing vaccinations for oneself generally as an American citizen and choosing to be vaccinated for typhoid (Y) when as an American travelling for the first time to China or India. In the first choice the rationale is that one is at low risk and the vaccine is unnecessary and costly, whereas in the second choice the vaccine is seen as a recommended precaution worth the costs. Vaccination policies are related to context and experience. Numerous other health care and public health choice examples can illustrate the problem with these conditions, which fail to account for external objectives, values, or norms—all of which matter for decision-making and are included in the health capability economics framework.

The internal consistency of choice axioms that undergird mainline economic theory and sub-disciplines like decision theory, social choice theory, and game theory, are internal and link to component parts of the choice function. In mainline economic theory, behaviour reveals preference and is taken as legitimate, without trying to understand why people make the choices they make. But even perfect consistency in choice behaviour does not necessarily constitute rationality if one extends rationality to include external criteria such as norms and values. Numerous examples from the empirical literature suggest consistency requirements do not illuminate actual behaviour in the real world, thus reducing their descriptive and predictive reliability and validity and this narrow view's normative power. Rather, a rational choice should be viewed as having two conditions. The first, "correspondence rationality," is a necessary condition of a rational choice and refers to whether what "one tries to achieve and how one goes about it" (Sen 1987, 13) correspond. Correspondence rationality may be supplemented by "reflection rationality," that is "rationality requirements on the nature of the reflection regarding what one should want, value, or aim at" (14). This second condition depends on characteristics external to choice such as one's values, aims, principles and preferences, a wider set of motivations espoused by the health capability economics framework.

Self-interest Maximization

Standard theory also views rationality narrowly as self-interest maximization, excluding other ethical and social motivations, so much so that considerable work has tried to expand self-interest to include nearly all human motivation, even altruism. For instance, altruistic behaviour can be viewed as motivated only by the future reputational advantages or tit-for-tat payback it might secure. The predictive and descriptive reliability and validity of this view is problematic especially for cooperation amidst interdependencies, public interest, competing interests among individuals, and rules and codes of conduct. Nagel (1970) argues against those who deny the possibility of altruistic behaviour, asserting that basing one's actions only on one's own interests, and not those of others, is in fact irrational.

Self-interest maximization is primarily viewed as utility maximizing. "[A]ll human behavior," Gary Becker states, "can be viewed as involving participants who [1] maximize their utility [2] from a stable set of preferences and [3] accumulate an optimal amount of information and other inputs in a variety of markets" (1976, 14). In this way, utility links to revealed preference: when a person makes a choice, she is maximizing her utility, her

self-interest or well-being. But other factors influence choice besides utility, self-interest or well-being (all representing her welfare). Kahneman, Slovic, and Tversky (1982) demonstrated that individuals frequently fail to systematically maximize their objectives, in research that has led to prospect theory and behavioural economics. Other lines of analysis reveal problems with the self-interest-maximizing view, including Schelling's (1984) bounded willpower (insufficient self-command or weakness of will), Simon's (1955) bounded rationality (individuals are not full maximizers), and the importance of institutions for human behaviour and social relations put forward by North (1981, 1990). These are important challenges to economic theory's foundations.

Sen (1985) has defined several elements that illuminate the concepts underlying these problems. He first defines self-centered welfare: here there are no externalities; my welfare only depends on my market basket, my own consumption, and I do not delight or suffer in another's market basket, well-being or actions. More formally: $W_i = f(C_i)$. Self-centered welfare is a fundamental property upon which major economic theorems rest. Self-centered welfare also excludes sympathy or antipathy towards others and concern for processes.

Sen's second definition is self-welfare goal. An individual's goal is to maximize her own welfare, or the expected value of her welfare under conditions of uncertainty. Others' welfare, actions or consumption are excluded. The goal function is expressed as $G_i = f(W_i)$ where the only thing a person is maximizing is her own welfare (W_i); or, if a person is including another person's welfare (W_j), $G_i = f(W_i, W_j)$.

The third is self-goal choice, a choice-making behaviour pattern exhibited by a person pursuing her own goals. A person's choices do not include the recognition of others' pursuits of their own goals.

While general equilibrium theory (Walras 1954) depends on all three elements—self-centered welfare, self-welfare goal and self-goal choice—the question arises: is it possible to violate one of these properties and not the other two? In health and health care the answer is yes. Take smoking, for example. Smoking violates self-centered welfare because it fails to consider externalities: smoking involves substantial externalities, especially associated with greater risk of illness for others from second-hand smoke and greater costs to society from tobacco-related health conditions and their treatments. But the person is maximizing her own (admittedly short-term) welfare, regardless of others' welfare or any codes of conduct about smoking, and is making the choice to smoke based entirely on pursuing her own goals (wanting to smoke). Personal goals can include other people's welfare, however, so if a person instead included others' welfare in her goal function, for example, $G_i = f(W_i, W_j)$, instead of $G_i = f(W_i)$, then smoking would violate the self-welfare goal. This example is critical for understanding the different policy implications of a standard economic approach (which defines a self-welfare goal as excluding the welfare of others) and a health capability economics approach, which bans smoking in public venues and allows government regulation of tobacco, recognizing other people's welfare as an important component of self-welfare.

Another health policy example concerns the pursuit of social justice. Motivated by justice principles, a person might embrace a goal of equal access to a basic health care benefits package for all people in her country. She might have health insurance herself and thus her stand has no direct bearing on her own welfare: the basic benefits package offered to others would not enhance her utility, well-being or happiness.

Similarly, a country might support universal coverage of a basic health care benefits package for citizens of another country unable to provide such services on its own. Of course, one can continually expand the self- and national-interest model to try to explain all individual or national behaviour by long-run self- or national interest. But this reasoning

would exclude the range of values, norms, and priorities that do, in fact, motivate both individual and national action. For example, Norway's collective egalitarianism value might well explain its support for universal coverage in an impoverished country more accurately than some urge to enhance its national reputation or secure a tit-for-tat advantage. Health capability economics makes ethical reasoning central. Ethical motivations can be as powerful as selfish ones in determining both individual and collective behaviour, if not more so.

Game theory, in particular the Prisoner's Dilemma game, also illustrates the problems with the self-goal choice axiom. In this game, if each person follows self-goal choice, a strictly individual strategy regardless of what others do (the non-cooperative strategy), each person ends up in an inferior situation to the counterfactual, in which each would have followed a cooperative strategy. This result has held true repeatedly in studies, even when individuals follow their own moral goal-orderings but fail to take into account others' moral orderings. Important mechanism design findings in implementation theory (Maskin 1985) and incentive-compatibility (Myerson 1979), as well as the imposition of equity principles on social preferences (Fleurbaey 2007), offer insights for solving core problems.

The main problem with self-goal choice is that it fails to assess the implications of one person's own goals for another person's goals. Personal well-being, welfare and moral goal-orderings alone are not sufficient for optimal outcomes in multi-actor game situations. Rather, optimal outcomes require a meta-ranking of all possible rankings, including the rankings that consider self-goal and other-goal simultaneously. Violations of self-goal choice are relevant for normative and empirical reasoning in health.

In public health and health care, studies across the globe demonstrate people's ability to pursue their own health goals while also considering others' health goals, recognizing the mutual interdependence of everyone's health and health care benefits. For example, the largest insurance pool possible maximizes both the equity and efficiency of health insurance by distributing health benefits and costs among elderly, sick, young, and poor population segments and wealthy, healthy, middle-aged segments. In another example, the benefits of medical and health care research are so widespread that people recognize its value for their own goals as well as others', particularly those suffering from little-understood diseases whose diagnosis, prevention and treatment we seek to understand better. Supporting medical research might seem "irrational" from a rational choice perspective, but the social goals of this behaviour far outweigh the aggregation of individual self-goal choices across society. Self-interested maximization alone is an implausible behavioural foundation for health economic theory and policy analysis. An alternative view, based on a plurality of human motivations, is essential.

Utilitarianism, Agency and Freedom

Utilitarianism as the basis for social optimality has received extensive criticism. Utilitarianism has three elementary requirements: welfarism, sum-ranking, and consequentialism (Sen 1979). Welfarism involves judging states of affairs by the sets of utilities in those states; sum-ranking entails adding individual utilities as the correct method of aggregation; and consequentialism requires judging choices by their consequent state of affairs. Taking utility as the primary welfare metric means that utility reflects a person's well-being—but does it? An alternative understanding focuses on a person's agency, her ability to make commitments and form values and goals, and her well-being. One's agency need not focus entirely on her own self-interest.

Distinguishing between a person's agency and well-being aspects is important in understanding the behavioural foundations of modern health economics and ethics, but the utility-based welfarist approach does not make this distinction adequately, a health capability economics approach does. The choice literature often interprets utility or well-being

as happiness, pleasure, desire fulfillment, and revealed preference. The well-being aspect, feeling happier or better off, may or may not relate to the agency aspect, the ability to pursue what one wants to achieve. Agency involves the ability to form objectives and to realize them. Desire is not a good indicator of health's value, especially in situations when one cannot reflect critically on one's health. For example, the effect of illness on health satisfaction is less in environments with more sick individuals, demonstrating that social health norm effects can influence self-assessed health (Powdthavee 2009; Thiel 2014). Moreover, the enormous variation in individuals' circumstances—the baselines for measuring incremental increases and decreases in well-being—makes utility an unreliable, insufficient measure of well-being. Even DALYs, an extra-welfare metric, are not equitable aggregate health measures (Anand and Hanson 1998). A better conception of well-being and a better and broader conception of the overall person encompass the capability to achieve valuable functionings, rejecting well-being as the only criterion for a person's welfare and utility as the measure of well-being. The well-being and agency of a person are more clearly seen in an individual's freedom, and two types of freedom in particular—process-oriented freedom and outcome-oriented freedom.

Health capability economics, as a framework of systematic theory, places freedom, not utility, as central. Freedom considerations, as opposed to merely welfare and utilitarianism, provide a framework for judging individual advantage and social optimality, equality and justice. A person's freedom is valuable in addition to her achievements. A person's opportunity or option for good health has value in addition to her health achievement. Four distinct categories are relevant for assessing the advantage or disadvantage of a person: well-being achievement, well-being freedom, agency achievement, and agency-freedom. This contrasts with mainstream health economics² which, even including extra-welfarism (Culyer 1989), takes freedom as being only instrumentally valuable and assumes individual agency is applied only to the pursuit of self-interest. But agency—and in HCP, health agency—have a greater role. Extra-welfarism has been advanced in health economics as a brand or adaptation of the capability approach, but it is not (Coast, Smith, and Lorgelly 2008; Hurley 2014). This mistake has led to inadvertent errors in reasoning such as the assumptions that the following constitute direct applications of Amartya Sen's ideas and the capability approach: including equity weights within the maximization framework, valuing process in utility terms ("process utility"), a focus on functionings exclusive of agency, and QALY's (a preference based health utility measure) as a capability metric (Cookson 2005). These efforts to move from welfarism to extra-welfarism in the health sector, while laudable, do not measure up to capability criteria and represent significant misunderstandings of what capability theory has to offer health economics.

Plurality, Incompleteness and Uncertainty

Moving past the limitations of economic theory's behavioural foundations reveals a variety and volume of ethical information that neither the standard health economic framework nor the extra-welfarist approach can accommodate. Health capability economics offers a fuller picture. Collapsing all relevant information into revealed preferences, utilities, happiness, monetary compensation (WTA or WTP) or achievement alone (e.g. health outcomes) and seeking complete or transitive ordering is insufficient. While health outcomes can give a partial view of health capabilities, a fuller picture requires health agency. Health functionings and health agency as objects of value are of different types and entail internal diversities as well. These issues of incommensurability and heterogeneity render complete and consistent overall orderings difficult if not impossible. Moving from the individual to the social level creates more diversity and plurality. Complete orderings and consistencies

—consistent and complete social welfare functions, requirements of economic theory—are unachievable, but partial orderings are possible. A complete ordering is not necessary to determine the best element in a choice set, so some incompleteness and inconsistency can be tolerated while making a partially justified optimal, if not maximal, choice.

This incomplete ordering applies especially when risk is uncertain and difficult to assess, as in many public health and medical care examples. Standard economic theory relies on expected utility as an approach to rational choice. Standard gamble methodology, which relies on probability assessments and expected utility calculations, forms the basis for health utilities, even extra-welfarist QALYs, in health economics. But uncertainty is a major problem in consumer rationality; sometimes probability distributions aid in assessing risk but in most cases both the probabilities and the necessary information about illness or treatment outcomes are unknown. Even predicting the outcome of a particular doctor visit or treatment regimen is difficult. Incompleteness and inconsistency are omnipresent in health and health care. People simply do not make the same health and health care decisions every time. In conceptualizing uncertainty, it is important to distinguish between (a) risk, uncertainty where probabilities are known (e.g. 50% chance of X, 20% chance of Y and 30% chance of Z) and (b) uncertainty, where we know that X, Y, and Z will occur but we do not know their probabilities. Knowing probabilities means knowing the frequency distribution of a particular event, the objective probabilities, whereas the subjective probability is the level of confidence one has in the occurrence of a particular event. According to economic theory if one is rational then one will follow Bayes rule, imposing an objective discipline of the frequency of events on the subjective assessment of what people themselves think will happen. If we know the frequency distribution of a given event A, then we know the risk of its occurrence; if we do not know the frequency distribution then we are uncertain about its occurrence.

The Ellsberg paradox tells us that presumed probabilities do not necessarily equal actual probabilities (Ellsberg 1961). It questions utility theory, which requires that people be equivalent between two lotteries in which the probabilities for one lottery are unknown. Expected utility theory requires that the expected value is $\sum_i P_i U_i$ where $\sum_i P_i < 1$ and $U_i \geq 0$. There is some circularity involved here when both probabilities and utilities are unknown such that probabilities are conditional on utility and utility is conditional on probabilities, hence a curvilinear relationship. The axioms of complete orderings, continuity, and strong independence are required and expected utility is determined by varying the probabilities among two lotteries, typically compounded lotteries, such that a person is indifferent between the two. These axioms fail to take process into account; expected utility is concerned only with outcomes and not process, a critique lodged by Broome (1991).

The Allais paradox is even more illuminating (Allais and Hagen 1979). In Situation 1, when given the choice between two elements A and A* where A is a lottery with 10% chance of \$5 million, 89% chance of \$1 million and 1% chance of 0 and A* is 100% of \$1 million, people choose A* because of its certainty and the desire to avoid the possibility of 0. In Situation B, however, in a choice between B and B* where B is a lottery with 10% chance of \$5 million and 90% chance of 0 and B* is a choice of 11% chance of \$1 million and 89% chance of 0, people choose B. The paradox is that preferring A* to A violates the axioms of expected utility theory and in preferring B to B* the person contradicts herself. Allais argues that the paradox arises because utility theory axioms are mistaken in assuming that mental attitudes or magnitudes are the same in Situations 1 and 2 when in fact they are different. The situations must instead be understood as states of affairs, which include both the outcome and the process. Describing the state of affairs involves including mental magnitudes, well-being, processes and counterfactuals, what one could have gotten but did not get in a choice exercise. Fairness in process is not included within expected utility theory, a

huge problem. But what are the alternatives? Prospect theory? Allais proposed another formula to expected utility theory, a polynomial formula, but the world is too complex and diverse to rely on a simple formula.

Ethical considerations are highly relevant for health economics but have not been adequately integrated in economic analysis; economic considerations are highly relevant for health ethics but have not adequately been integrated into ethical analysis. The failure to adequately take note of and integrate ethical considerations into health economics has left health economics weakened in its normative, descriptive and predictive abilities. A plural evaluative framework is necessary, and health capability economics and the HCP provides an opportunity.

Social and Ethical Motivations: The Common Good

A person might have reason to violate self-goal choice, depending on whether the unit of analysis is the individual, society, or both. If as a society, for example, we are trying to accomplish something together through partnerships then the correct unit of account is not just myself, but my group. Herd immunity in public health is an example. People create herd immunity together through individuals acting separately and getting vaccinations. Immunized individuals do not contract the targeted illness and thus do not infect others, thereby benefiting others. The costs of vaccination may be high, particularly if one includes time and lost productivity. Moreover, from a narrow rationality perspective, getting vaccinated may not seem like rational behaviour, especially for low-risk individuals. Yet individuals get vaccinated, to protect themselves, their families and their wider community circles. Individuals also voluntarily stay home from work or school so as not to spread germs. If everyone had a narrow view of rationality, not nearly as many people would get vaccinated, and herd immunity would suffer. Individual self-goal choices are suboptimal and inefficient from a social perspective. Voluntary other-regarding choice, in addition to self-regarding choice, enhances social optimality.

Individuals also reach decisions on ethical grounds. Much of our behaviour results from consciously rejecting some possible options because they simply are not the right thing to do. Under these circumstances, people do not change their objective functions, as standard economic theory would suggest, but rather they constrain themselves by reducing the possible choices. Kant's categorical imperative achieves this.

Rejecting the ethics-oriented view or social motivation view is unrealistic; ethics plays a role in actual decision-making. Other motivations include duty, loyalty, good will, following rules, value systems. Self-interest alone does not determine behaviour.

The Common Good

Collective action and cooperation are essential to create conditions of health. The individual's capacity for well-being links inextricably to the effective functioning of society; individual well-being requires an organized community that promotes the common good. Despite the axioms of standard economic theory, cooperation is not an anomaly but a hard-wired human characteristic. Cooperation, working together for common benefit, evolved in humans because societies that did not cooperate did not survive (Tomasello et al. 2012).

Empirical evidence demonstrates that cooperation requires fairness (Brosnan and de Waal 2014). Unfair situations generate negative responses; averting inequities advances cooperation. Institutional structures can foster such cooperation. These structures embody the interests of all, not a chosen few.

But why would actors cooperate? Why would they work together towards collective goals rather than continue to pursue self-interest? Even if actors did cooperate, why wouldn't they do so only in instrumental terms, viewing other actors as potential sources of costs or benefits as under a rational actor model (Ruger 2012)?

Extensive evidence helps answer these questions. There is abundant evidence of mutual cooperation and reciprocal altruism in humans (Dugatkin 1997) and of social motivations for effective cooperation—attitudes, shared identities, common values, trust in others' character and motivations, joint commitments, fair procedures, fair exercise of authority and decision-making, legitimacy, emotional connections—rather than narrow instrumental self-interest alone (Tyler 2010). We cannot be understood apart from our social context. Health capability economics recognizes these central elements (Ruger 2010).

Much scholarship focuses on socially and ethically motivated cooperation. Cooperation appeals to common identities, shared values, virtues, and a sense of obligation. Scholars contrast two motivational approaches, an instrumental approach of government rewards and punishments for behaviour, and a social motivation approach, socializing people into groups and supporting social ties. People are motivated to cooperate based on their own values and their links to social groups (Tomasello et al. 2012). Empirical studies in management, regulation, and governance demonstrate that social motivation is as effective as instrumental motivation, if not more so, because the increasingly collective activity requires cooperation, rather than compliance alone (Tyler 2010). Compliance requires significant resources to monitor populations and punish violators. In health, moreover, the goal is a healthy society with healthy individuals. People must willingly foster the health of their communities, their families and themselves, cooperation that legalistic rewards and punishments do not always or exclusively effectively motivate.

Inequity Aversion

Just as pro-social behaviour facilitates cooperation, anti-social behaviour—unfairness, inequities, a lack of trust, selfish acts and short-term self-interest maximization—undermines it. Experiment after experiment has found negative reactions to unequal outcomes like excessive over-compensation or under-compensation in games that treat joint contributions to a particular undertaking inequitably (Brosnan and de Waal 2014). Negative reactions include emotional responses (e.g. anger and moral disgust), rejection of outcomes and refusal to participate in cooperation, as shown in game experiments in many countries (Henrich et al. 2004).

Humans have evolved with a sense of justice and fairness, which facilitates cooperation, social reciprocity, conflict resolution, and shared endeavours. Research suggests that aversion to inequity is widespread in cooperative species under many conditions (including refusing immediately advantageous outcomes) and that it has evolutionary benefits. Humans experience both “first-order inequity aversion” (rejecting unfavourable unequal outcomes so as not to be taken advantage of) and “second-order inequity aversion” (rejecting unequal favourable outcomes) (Brosnan and de Waal 2014).

A central feature of the human sense of fairness is impartiality. We judge outcomes against an ideal, a standard, which applies to all individuals, not a chosen few. While humans differ by culture and circumstance, their common humanity provides the basis for core standards and ideals. Health economics needs impartial institutions that engender trust and legitimacy and seek to equalize states of affairs for all. Rational choice theory, standard economic theory, behavioural economics, and extra-welfarism offer limited guidance for effective health governance, health capability economics does.

The Health Capability Paradigm

The HCP (Ruger 1998, 2009) addresses many deficits in economic theory underlying current health economics. HCP does this by integrating economic and ethical reasoning for individual and collective health choices. While economic theory employs the ideas and tools of consumer theory, demand-and-supply equilibria and utility and indifference curve analysis, HCP uses a number of characteristic approaches to analysis. Distinctive features of the HCP, embodying health capability economics, include human flourishing and health capability; incompletely theorized agreements (ITAs); trans-positionality assessment; shortfall inequality analysis; production and cost modelling and efficiency evaluation; public moral norm considerations; procedural fairness; personal and social responsibility; and the study of uncertainty in the context of insecurity and vulnerability. HCP starts with an Aristotelian notion of the good life and societal goals of promoting good quality of life for all (Aristotle 1999). This view is broader than utility or welfare. It raises ethical questions relevant to economics, particularly health economics, since it helps us understand human motivation in both ethical and economic terms. Ethical considerations in health economics directly affect behaviour. Any framework of health economics must therefore incorporate them to provide more authentic normative guidance and descriptive and predictive explanatory power, if we are to enhance behaviour and find policy solutions to complex problems. Health ethics must have a central place in health economics, and long-held economic concepts and methods, such as technical and allocative efficiency and consequential analysis, must inform health ethics.

Most of the primary features of standard economic analysis, such as consumer theory and demand-and-supply equilibria and utility and indifference curve analysis, do not apply to health and health care. Behavioural economics and extra-welfarists moves, while laudable, tinker at the margins of a theoretical framework and tools that do not necessarily improve our understanding of health and health care. Rather than try to fit all the exceptions (e.g. to rationality from behavioural economics and to more than utility from extra-welfarism) to standard economic assumptions within the economic framework, an alternative framework that incorporates useful economic ideas and tools, for example on the production and cost side, within an overarching normative framework is likely a better prospect. Why? Because even welfare economics, behavioural economics and extra-welfarist economics, which themselves critique existing markets, rationality and health and health care distribution, do not provide the theoretical principles or positive analytical tools needed to understand the concepts of flourishing and efficiency that concern society the most. Inescapably, ethical theory is required to ascertain the reasoning and context to determine what society ought to do with respect to need and equity in health and health care, requiring a theory of health and social justice (Ruger 1998, 2004).

The HCP offers a set of values and criteria for assessing existing institutions and policies and proposals for reform. From a health capability perspective, justice requires legal, social, and political arrangements that enable individuals to be healthy. While the HCP is presented more fully elsewhere (Ruger 2009), in brief, HCP, embodying health capability economics, offers several unique resources for health economics and ethics and a way beyond the many current deficits in economic theory.

Human Flourishing and Health Capability

HCP is rooted in human flourishing, which values health intrinsically and more highly than solely instrumental social goods like income. It gives special moral importance to health capability, a person's ability to be healthy, which includes health functioning and health

agency. It also recognizes that health underlies other types of functioning, including one's wider agency, or the ability to lead a life one values. Unlike standard economic theory, behavioural economics and extra-welfarism, health capability economics provides health agency to explain how individuals ought to and do behave about their and other's health. Restrictions on health agency have impacts on individual and societal health and well-being and the health capability economist seeks to better understand these relationships and devise policies to address them.

Social Choice Theory

A second unique HCP component relates to its theoretical and methodological approach to collective choice. The bioethics and public health ethics literature focuses sharply on democratic procedures for decision-making about health and health care. In espousing health capability as a substantive end, HCP addresses two important questions that standard economic theory, extra-welfarism and behavioural economics neglects: (1) how to obtain actual collective agreement on a dominance-partial ordering of health capabilities and (2) what type of social decision-making might apply.

This phase of the work draws on social choice theory and argues that ITAs form a complementary framework for the Aristotelian/capability view, providing a useful approach to collective decision-making in health and health policy (Ruger 1995, 1998). No unique view of health exists to evaluate health and social justice. The incomplete ordering of the capability approach, in combination with the ITA on that ordering, allows for reasoned public policy development and analysis amidst plural goods and different, even conflicting, views. Conditions of competition from standard economic theory and of maximizing the sum of consumer and producer surplus do not apply to health and thus the standard market equilibria where demand-and-supply curves intersect do not apply either. Yet the welfarist's and extra-welfarist's aggregation and maximization methodologies do not apply either rendering QALYs, WTP, WTA, Contingent Valuation inappropriate measures of health and well-being in collective decision-making.

Trans-positionality and Prioritization

This theory values "central" health capabilities above "secondary" ones. Central health capabilities are, simply, the capabilities to avoid premature death and escapable morbidity. These central features represent universally valued elements of health capability and offer a clear, grounded, and agreed-upon view. This model reflects an ITA on core dimensions of health capability. It provides a shared standard for health assessment. This view can help determine whether a particular public health or health care intervention or technology merits societal resources. Linear valuations, the cornerstone to welfare economic and extra-welfarist methodologies, as the summation of life quantity and quality components, do not bear out in the real world were people willingly sacrifice given QALY gains to prioritize critical health states such as providing resources for those who are severely ill. Central health capabilities have a special status that is not linearly superior to other non-central capabilities but that is important due to its vital role in human flourishing, prior to many other considerations.

Shortfall Equality

This view employs "shortfall equality" to judge public policies affecting health. Shortfall equality compares shortfalls of actual achievement from the optimal average (such as

typical longevity or physical performance). The concept can also assess health capabilities, especially when equalizing achievements for different people is difficult. Human diversity is pervasive and consequential and can prevent some people from achieving maximal health. This approach is particularly relevant for assessing the health capabilities of people with disabilities because it accounts for differences in the maximal potential for health functioning without “leveling down” achievement goals of the entire group. This view also justifies having good health as an end goal of public and health policy even as we acknowledge that it is impossible to guarantee good health or equal health to everyone. Given the extensive deviations from the competitive model in health and health care, especially the assumptions under perfect competition, the role of uncertainty, information and externalities, and the normative pull of the notion of need in health and health care, need and need-based distributions are a central component of the HCP on a health capability economics view and a joint scientific and deliberative approach as below. In HCP health needs have a more independent and objective basis and health equity is conceptualized and measured in terms of shortfall inequality.

Public Moral Norms

Because health equity achievement requires resource redistribution, related legislation and regulation, and health-promoting individual and group behaviour, HCP requires an ethical commitment by all, those most fortunate and those in need, to health capability for everyone. Without this ethical commitment, redistributing resources from the wealthy to those less fortunate and from the well to the sick will not be possible, nor will health behaviour change. The effort to do so must be voluntary, that is, acts that are formed under fair conditions in which there is no duress or coercion. Individuals must embrace the public moral norm that health is worthy of social recognition, investment and regulation. The ethical imperative of health equity urges both individual and state action to help meet our own needs and those of others today and in the future. Standard economic analysis, extra-welfarism and behavioural economics provide no independent place for norms in their theory. In health capability economics, decision-making on ethical grounds is one idea behind individual and collective behaviour. Rational individuals making consumption choices under conditions of scarcity is not the main idea. Voluntary other-regarding choice in addition to self-regarding choice enhances social optimality in HCP. Unlike consumer equilibrium, a main idea behind HCP is the individual’s capacity for well-being is linked to the effective functioning of society; individual well-being requires an organized community that promotes the common good; collective action and cooperation are essential to create conditions of health. Promoting the common good requires public moral norm internalization, a sense of justice and fairness as standards for cooperation rather than market competition.

Social Determinants of Health

How do social determinants of health fit within an overall bioethics or public health ethics theory? The “separate spheres of justice” view argues for focusing on justice in bioethics or public health ethics without reference to other public policy domains. Those who reject this view claim that bioethics or public health ethics cannot focus only on health, but must also address the many overlapping determinates affecting well-being. The HCP is more nuanced than these opposing perspectives. We are far from understanding the precise societal mechanisms influencing health, for example, the income and population heights relationship is “inconsistent and unreliable” (Deaton 2007, 13232) though clearly numerous policy domains impact health. It is reasonable to maintain the traditional criteria of a given

policy domain affecting health (e.g. employment rates for employment policy) and to supplement those indicators with measurements of that domain's effect on health.

A Joint Scientific and Deliberative Approach

The HCP involves a joint scientific and deliberative process as a resource allocation framework. This public process combines the evidence base of health care and public health with input from individuals, physicians and public health experts to assess the value of treatments, medications and other interventions. It is important to assess both the necessity and the appropriateness of a health intervention. Although individuals have primary authority for health care decisions that affect them directly, physicians can help determine "medical appropriateness" and "medical necessity." In this framework, individuals employ their health agency, and physicians seek their patients' best interest. Physicians and public health experts share knowledge and resources with each other and with lay persons to balance technical and allocative rationality with ethical rationality; a more expansive account of rationality incorporates both. This approach incorporates participation and voice, but ultimately evaluates health policy by its effects on health capability.

Shared Health Governance

Decisions emerge from a shared concept of capability for health functioning. When disagreements occur, practical models of agreement or consensus yield workable solutions for standardizing prevention and treatment decisions and developing health policies and laws. This view contrasts with paradigms in which consumers alone, the market, physicians or public health experts alone, strict algorithms or cost-benefit calculations, fair procedures, or third parties, such as insurers, make health decisions. The underlying framework is shared health governance, a construct in which individuals, providers, and institutions work together to create an environment enabling all to be healthy. The decision-making of other approaches focuses narrowly on individual decisions in isolation based on rational choice, but a shared health governance model incorporates individuals' decisions for themselves and for their society. This paradigm promotes consensus on substantive principles and procedures of distribution, offers a method for achieving that consensus (ITAs), places importance on the results of health policies and laws (costs and effectiveness) in judging them, and promotes deliberation through collaborative problem-solving. Thus, the framework integrates both consequential (substantive) and procedural (democratic) elements of health economics and ethics. Neither the market equilibria of the standard economic model nor the social welfare function or maximal health of the welfare economic or extra-welfarist approach provide the basis for the allocation of societal resources because the basic assumptions of these models fail to approximate what is normatively attractive or how people actually behave.

Equal Access

Shared health governance approaches equal access differently. Equal access should mean equal access to high-quality care, not a "decent minimum," "adequate care," or "tiered health care." Equal access on this view does not imply equal outcomes or equal results. Nor is it enough to provide health care without efforts to expand individuals' health agency—their ability to navigate the health system and their environment to avoid mortality and morbidity and to meet health needs. Furthermore, shared health governance means shared responsibility—individuals, providers, and institutions have respective roles and

responsibilities in achieving health goals. In policy terms, achieving equal access would require continuous efforts to standardize medicine, reduce medical errors, and move towards a gold standard of care. Such a view does not condone the significant disparities in health care quality that exist in many countries. Because both consumer theory and the social welfare function treat health and health care as one of multiple utility producing commodities, neither framework provides a valid and reliable basis for understanding societal choice in health and health care. Health need, rather than utility or price, provides a more objective and independent basis for assessing equal access to health care. Market outcomes are rejected on this view of equal access, health care need is the health care resources needed to achieve a threshold level of health functioning and health agency. In health capability economics, neither price nor utility are the basis for decision-making and professional ethics, rather than provider (doctor) self-interest, and health agency drive decision-making.

Responsibility and Health: Voluntary Risk

This theory seeks to enhance individual responsibility through improving health agency, as both are essential for achieving optimal health outcomes and creating a fairer health system for all. Any theory of health economics and ethics must address concerns of personal responsibility and voluntary risk. At first glance it appears that some people are not voluntarily averse to health consequences—smokers unconcerned about lung cancer, for instance. Some think people who knowingly take health risks should pay additional sums of money or be solely responsible for their health insurance and health care. However, understanding the causal determinants (including genetic determinants) of and differences between voluntary and involuntary contributors to health risk is difficult. Thus, blaming individuals for their health problems is often unjust (Wagstaff and Kanbur 2015). That said, improved health agency and health functioning can impose greater responsibility on individuals to make healthier choices and ultimately improve their health and the health of their community.

Moral Foundations of Health Insurance

A commitment to human flourishing opens up an alternative moral framework for analysing health insurance. Academic approaches to health insurance have typically adopted a neo-classical economic perspective, assuming that individuals make rational decisions to maximize their preferred outcomes and that businesses (including insurance companies) make rational decisions to maximize profits. In that approach, individuals who are risk averse will purchase health insurance. In empirical studies, however, individuals do not always make rational choices and consumer theory, the bedrock principle of standard health economics, is invalid, and neither extra-welfarism nor behavioural economics provide the tools for understanding the common bad of insecurity and vulnerability. Individuals also find it difficult to assess their health risks and to know how much insurance they need. Bioethics and public health ethics have focused on the issue of equal access to health care, but have provided little in the way of philosophical justification for risk management through health insurance per se. HCP argues that universal coverage is basic to human flourishing—to keep people healthy and to protect them from ill health's economic consequences. The HCP and health capability economics provides a more robust basis for understanding and analysing the role of health insurance, a major empirical reality in health and health care, for human behaviour.

Opportunity Costs and Efficiency

The HCP and health capability economics addresses a major void left in the bioethics and medical ethics fields; the crucial principle of opportunity costs and analysis of efficiency for health and health care. The HCP takes the idea of opportunity costs and efficiency analysis as essential, but it includes them differently from the standard economic model, welfare economics, extra-welfarism and behavioural economics. For example, these economic approaches entail reasoning at the margin, the costs and benefits of the next marginal unit are the basis for decision-makers (consumers, producers, or other entities such as government agencies) to make an appropriate choice. In this model, the incremental cost is traded off against the incremental benefit of a given service, product or investment. The realm of the coin is thus calculating and deciding optimally at the margin. The HCP and health capability economics is not wedded to marginal analysis in this way. Rather, this paradigm takes a step-wise approach to resource allocation whereby economic considerations follow and complement clinical input, not vice versa. Health capability economics, like mainstream, welfare, behavioural and extra-welfare economics, takes the scarcity of resources as a defining feature and major premise. Time is one of the many resources that are scarce. It is important to identify efficient programmes. Evaluation of health policies, laws, and technologies must consider costs because we live in a world of scarce resources. Moreover, every resource has an alternative use, so its expenditure corresponds with an opportunity cost. Therefore, some limits are necessary, and individuals and society, through shared health governance, must use these resources parsimoniously by evaluating efficiency. Cost-minimization analysis (CMA) and cost-effectiveness analysis (CEA) can be useful in comparing interventions for a single population, such as AIDS patients, by weighing the marginal benefits and marginal costs of two alternative interventions or different production possibilities. Both CMA and CEA are constrained by the ethical commitment to the ability to be healthy.

The consideration of costs under this theory resembles a utilitarian welfare economic perspective in that costs and outcomes are both valued. However, it contrasts with the utilitarian aggregation methodology and recommends CMA and CEA in combination with equity-oriented allocations (as opposed to incorporating equity weights into CEA). CMA and CEA can also reveal financial reasons for basic health care inequalities. Technical and allocative efficiency analysis can show opportunities for substitution of inputs and the best possible allocations for production to achieve health status goals.

Disabilities: Reasonable Accommodation

In societal decision-making about health care and public health, ethicists have struggled to address disabilities and severe physical and mental impairments. The HCP argues for basing judgments on joint patient-physician decision-making (at the policy and individual levels) and using medical necessity, medical appropriateness, and medical futility as criteria, rather than attempting to estimate specific weights for severely disabled individuals, as other frameworks do. It also rejects the marginal analysis of costs and benefits applied to disabled populations or disability categories allowable in the mainstream, welfare, behavioural and extra-welfare economic approaches. It does not, however, condone a “bottomless pit,” whereby excessive investments in inputs have no or little effect on health capability, the diminishing returns to investment or production problem. Rather, costs should be considered, in a step-wise fashion, to ensure societal investments are made prudently. This may mean substitution or employing alternative techniques for health production that could more efficiently achieve health status goals. Thus, this paradigm aims to protect disabled people from discrimination while limiting exorbitantly costly care that would deprive others of health resources.

Conclusion

The HCP integrates consequentialist and deontological conceptions to determine the right and the good in health economics and ethics. It favours justice and health policies that, while not necessarily perfect or ideal, are “mutually acceptable to people whose preferences diverge” (Scanlon 1975, 668). To promote the good life, the HCP values core health capabilities—avoiding preventable disease and premature death—and favours those below the maximum average over those above it. It also emphasizes individual health agency and supports efforts to improve health for individuals so that they have the mental and physical capacity required for agency. The approach emphasizes shared decision-making at the policy and individual levels. This rational, evidence-based deliberative process involves individuals, physicians and public health experts. HCP offers a framework for integrating health economics and ethics.

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Notes

1. This section draws extensively on my notes from Economics 2057: Rational Choice, a fabulous graduate economics course at Harvard that I took with Amartya Sen in Fall 1995.
2. For definitive compilations of work in health economics see, Culyer and Newhouse (2000); Culyer (2014); Folland, Goodman, and Stano (2013).

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