3 Health as a life course trajectory of complete well-being in social context

Introduction: the many debates over health's meaning

"Population health science" has no single narrow meaning, but the core of this new science, approach, framework, paradigm—whatever it may be—is the goal of reconstructing the theory and practice of how to promote the health of populations, in reaction to the lessons learned from twentieth-century public health and healthcare. So, it should be no surprise that this ambitious reconstruction process has repeatedly found itself struggling with the question of what we should take the meaning of health to be in this new population health science enterprise. In this chapter, I defend a new health concept, an adaptation of the World Health Organization's social concept of health, described in Chapter 2, combining that concept of health with Life Course Theory. Life Course Theory is an interdisciplinary theory of human health and development that frames human life as a socially embedded trajectory lasting the entire lifespan. In defending my new concept of health, I explain that it is designed to serve as a sort of pluralistic meta-concept (a toolbox for health concepts, not the tool itself), compatible with a wide range of health concepts and health assessment methods.

The standard dichotomy in philosophical debates over the nature of health

is between non-evaluative vs. evaluative definitions, disputing whether health is an objective fact of the world or something that requires subjective normative judgment about the goodness and badness of certain conditions (Humber and Almeder 2010; Carel and Cooper 2014). Coggon helpfully suggests that we also take into account two additional dichotomies: positive vs. negative health concepts (disputing whether health is the positive presence of something or simply the absence of disease), and internal vs. external health concepts (disputing whether health is the sort of thing that must be measured by external observers or reported by each person living with that health experience) (Coggon 2012: 11–20). This chapter will not seek to fully resolve these and other related disputes. I think that Amartya Sen is on the right track when he favors internalism for its humanistic recognition of health as an experience while also acknowledging that sometimes externalism is required to help us take a step back and recognize how social conditions shape perceptions of health (Sen 2004). But, in this chapter, I advocate a pluralistic meta-conception of health that is designed to be only as narrow as needed to guide health promotion efforts. The most controversial stance I take within the landscape of philosophy of medicine's debates over the meaning of health is in my advocacy for a positive conception of health. This is in keeping with the WHO positive conception of which, that includes the absence of disease as one set of ingredients for health but also requires the presence of well-being.

The most prominent advocate of holistic health concepts in the philosophy of medicine community is Lennart Nordenfelt. Over his career he has offered many arguments in favor of holistic health over competing health concepts. Given my philosophical methodological orientation toward respecting and seeking to learn from the knowledge of non-philosophers, I am particularly interested in Nordenfelt's contention that holistic health concepts are already ubiquitous outside of philosophy.

> I claim that there is a set of related conceptions of holistic health embedded in ordinary language. These conceptions are influential, not only in common discourse but also in public debate, in health promotion, and in many sectors of healthcare.
>
> (Nordenfelt 2016: 212)

This chapter offers an addendum to this contention by arguing that life course theory is also widely used outside of philosophy, and that much can be learned from its prevalence, just like we can learn much from the prevalence of holistic health-thinking. I synthesize holistic health-thinking and life course health-thinking, by adapting WHO's holistic concept of health to more explicitly incorporate the insights of a life course model of health.

This chapter's content is foremost guided by a concern for the "real world" repercussions of health concepts—applicability to health science practices, relevance to human well-being, the looming dangers of cultural imperialism, and related concerns about the consequences of advocating for health concepts. I only offer a single overarching—though pluralistic—concept of health because I think it is of practical value. In this book of outward-looking and engaged philosophy, I take a philosophical problem to be pressing if engaging in philosophical analysis and discourse would be a plausible means of serving the interests of non-philosophers. As I will revisit in Chapter 7, I concur with Lemoine (2013), Schwartz (2014), and Griffiths and Matthewson (2016) that the problem of defining health should not be trying to uncover the "true" meaning of health, but more like the process of doing concept "explication" in the tradition of Carnap and Quine—philosophers should strive to make health concepts more illuminating and useful.

Life course theory

Life course theory and population health science both have tangled historical roots (see Chapter 2) (Elder et al. 2003; Kindig and Stoddart 2003). It seems that the two lines of research arose independently out of innovations stretching back to at least the first half of the twentieth century, and that each began exponentially increasing its appearances in published literature beginning in roughly the mid-1990s (Shanahan et al. 2016). After emerging in parallel, they are now partially converging. Life course theory is now a mature general theory for the study of human lives. Like population health science, it advocates for an interdisciplinary theoretical approach offered as a corrective to the failures of the previous researchers (see Chapter 2). In the case of life course theory, it was a reaction to the problem that sociologists of the early twentieth century had been too disinterested in longitudinal aspects of human life and too blind to the power of social contexts (which also change over time) (Elder et al. 2003: 3-4). Life Course Theory emerged out of a rejection of a deep dissatisfaction of the view of human life offered by earlier scholarship: richly detailed snapshots of people that still only captured moments in time, snapshots so single-mindedly focused on their human subjects that the background was left blurry. By contrast, Life Course Theory replaces single zoomed-in snapshots with video or photo montages observing people over long periods of time, zoomed out to ensure that subjects are seen inside their surrounding environments. Life Course Theory is far too wide-ranging to fully summarize here (Elder et al. 2003); I will extract only two of the key principles offered by the theory.

The first lesson I will extract from Life Course Theory is the warning to avoid assessment of health at a single moment in time—it must be assessed with respect to a developmental trajectory that occurs over time. Even when philosophers construe health as a process, the time component is typically left in background or limited to a snippet of time, such as the course of an infection (see discussion in Smart 2014). The second lesson I will extract is that

individuals' health develops through dynamic relationships with the healths of their population and their social-environmental contexts. This echoes Chapter 2's historical account of the gradual recognition of health as a social phenomenon.

Keyes and Galea surmise the importance of Life Course Theory for population health science when they offer the following as one of their nine "foundational principles" of population health science: "The causes of population health are multilevel, accumulate throughout the life course, and are embedded in dynamic interpersonal relationships" (Keyes and Galea 2016: xiii).[3] As population health scholar Onyebuchi Arah describes in a 2009 philosophy article attempting to bridge population health theory and philosophical understanding of health: individual health and population health dynamically co-develop over time.

> Neither individuals nor collectives can be understood in only cross-sectional, one-time views … collectives age across generations of its members, evolving and defining and being defined through cumulative and adaptive experiences, events, and history.
>
> (Arah 2009: 240)

A Life Course Theory perspective on health as a lifelong trajectory clarifies how health is deeply embedded in social processes. Alternative concepts of health that put less emphasis on health's longitudinal aspects are limited in their capacity to engage with the accumulated mutual dynamics of the individual and their social context.

Life course lesson 1: health is best understood as a lifelong phenomenon, not in time slices

> Concepts of health and models of health promotion have long struggled when contending with diseases that emerge very gradually, such as chronic diseases.
>
> (Fuller 2017)

Such diseases are hard to pin down with the language of physiological processes or discrete bodily states when the processes and states change drastically over time (e.g., the gradual transition from pre-diabetic insulin resistance to the multitude of Type 2 diabetes symptoms), though it is possible to account for them this way (Fuller 2017; Smart 2014). Even before it became widely accepted that chronic diseases should be global health promotion priorities, Corbin and Strauss offered a new model of chronic disease that pushed back against the perceived limitations of biomedical model accounts of chronic diseases that represented the diseases as only physiological states and processes. They instead proposed the Chronic Illness Trajectory Framework (Corbin and Strauss 1988):

> under which, a chronic illness is viewed as a serious disease affecting a person's mental, emotional and social well-being, and a trajectory is a course of illness over time, together with the actions taken by patients, families and health professionals to manage or shape the course of this illness.
>
> (Morales-Asencio et al. 2016: 123)

As will be elaborated in the next section, this notion of a temporally extended *trajectory* of disease complements a social understanding of disease, in which the processes of disease are experienced and responded to by both patients and the people around them. For the moment I am drawing attention to the temporal aspect of the model, including the trajectory metaphor's represen-

tation of health/disease moving through time not as a branching series of mechanisms and processes, but instead as an object on a path, with a path behind it and a combination of direction and momentum that together resist attempts to redirect it. The case of atherosclerosis, cholesterol blockage in the arteries, serves to illustrate the benefits of understanding health as a life course trajectory.

Atherosclerosis has long been a point of difficulty and contention for philosophers of medicine, as it is a condition that exists on a spectrum in all people; everyone's arteries have at least some cholesterol/lipid plaque and inflammation from it (Boorse 1977; Giroux 2015). This is the source of a series of questions about normality, appropriate comparison/reference populations, etc. (Boorse 1977; Giroux 2015; Fuller 2017). Any specific health concept will struggle with at least some number of outlier cases, but no worthy health concept can afford to fumble the atherosclerosis case. The cardiovascular diseases caused by atherosclerotic inflammation and plaque accumulation in the arteries are an enormous source of global morbidity and mortality. In the 195 countries monitored by the Global Burden of Disease Study, 21.3 percent of the deaths in 2015 were due to just two of the diseases caused by atherosclerosis, ischemic heart disease and ischemic stroke (GBD 2015 Mortality and Causes of Death Collaborators 2016: 1484, 1488). Life course thinking and a temporally extended trajectory understanding of health offer a way forward, but require some serious conceptual and practical shifts.

In light of the need to develop more effective treatment models for atherosclerotic disease, in 2013 the American College of Cardiology and American Heart Association released new guidelines for cholesterol management to prioritize patients' life course trajectories when treating atherosclerotic cardiovascular disease (Stone et al. 2014). The guidelines prioritize the assessment of whether a patient's trajectory is heading toward harm from

a major cardiovascular event in the foreseeable future, a radical shift from earlier treatment guidelines' focus on whether a patient's LDL ("bad") cholesterol level is high enough to currently qualify as a pathological disease state meriting treatment via a statin drug (Finkel and Duffy 2015; Stone et al. 2014; Goff et al. 2013). The old question for the physician assessing whether to begin a treatment regime such as a statin drug (e.g., Lipitor) was: "Are this patient's LDL cholesterol levels, and the associated lipid plaque in their arteries, elevated enough to require drug therapy?" The new question, after the 2013 ACC/AHA shift became: "Based on available knowledge about this patient (age, tobacco use, cholesterol levels, etc.), how likely are they to have a heart attack or other major cardiovascular episode in the foreseeable future?" The ACC/AHA switch to a life course perspective has two arguments in its favor. First, atherosclerosis accumulates over very long periods of time:

> extensive epidemiological, pathological, and basic science data indicate that the development of atherosclerosis ... occurs over decades and is related to long-term and cumulative exposure to causal, modifiable risk factors. Thus, a life-course perspective on risk assessment and prevention must be taken, especially among younger individuals.
>
> (Goff et al. 2013: 2945)

The second practical reason for shifting to a life course perspective is that it refocuses attention on the long-term risk of harm, rather than focusing on reducing the current cholesterol level into an acceptable range (Finkel and Duffy 2015). But Life Course Theory's contribution to an updated health concept is more than an admonition to think long-term or think about prevention. Rather, it makes long-term trajectory the subject of intervention—a patient's current level of arterial plaque is demoted to a secondary consideration, only relevant as it relates to the predicted risk of a major cardiovascular

episode. As previously mentioned in the Chronic Illness Trajectory Framework (Corbin and Strauss 1988), it is best to pair a long-term view of health with a view that foregrounds the complex dynamics between individuals, populations, environments, and general social contexts.

Life course lesson 2: population health and individual health are best understood as co-developing dynamically

The standard distinction between individual health and population health begins to dissolve when one adopts a life course perspective. As Arah explains:

> a person's health cannot be seen in isolation but must be placed in the rich contextual web such as the socioeconomic circumstances and other health determinants of where they were conceived, born, bred, and how they shaped and were shaped by their environment and communities.
>
> (Arah 2009: 235)

The trajectory of the individual and the trajectory of the social context are inextricably linked, and so any attempt to assess one will necessarily involve the other. As surmised by bioethicist Thomas May and colleagues, the move toward a population health management approach, "collapses traditional distinctions between clinical medicine and public health by emphasizing the symbiotic relationship between individual patients and broader populations" (May et al. 2017: 167).

By taking a longitudinal view of life and health, we make it far easier to see the dynamics between individual health and population health. As Chapter 2 describes at length, health is thoroughly social. As such, attempts to split individual health from population health are dubious at best. Along similar

lines, Krueger criticizes Boorse's biomedical/Biostatistical model for building individual health from the bottom-up—a complete set of disease-free tissues constitutes a healthy person (Krueger 2015).[2] In Boorse's account, populations serve as comparison classes for judging the statistically normal body part activities that define a healthy body--other features of social contexts fade into the background. Moving the dynamics of social life from background to foreground allows us to recognize and intervene upon the synergies that mutually reinforce good health or poor health; a patient is not a collection of functioning/malfunctioning organic machinery floating in a vacuum.

Take the much-publicized problem of unhealthful fast-food restaurants' popularity among wealthy nations, particularly in subpopulations with lower socioeconomic status. On the one hand, it may be tempting to try to paternalistically solve the problem of fast-food consumption by having governments ban these restaurants. On the other hand, one might also be tempted to put in place an education campaign (inevitably meager and underfunded compared to fast-food advertising) and then place all responsibility on individuals who fail to adopt healthier habits. Either of those options only recognizes a one-way causal arrow from population/environment to the individual within it. Individual↔population dietary health dynamics are a two-way street. A person's level of desire for fast food is shaped by a combination of factors operating over the complete life course, from accumulated taste preferences to advertising, and acting on those tastes by buying fast food reinforces the fast-food market. For example, in the US, Black children and rural children are disproportionately targeted for fast-food advertising (Ohri-Vachaspati et al. 2015), which causes individuals within these populations to increasingly desire these foods and hence drives the disproportionate consumption of fast food in these populations. Accordingly, recent research on obesity interventions suggests that the most promising way forward is

to recognize the complexity of individual dietary health choices/behaviors (Backholer et al. 2014). The most promising avenue is to recognize that individual people are both agents of action and change within their social contexts and also affected by those social contexts (Backholer et al. 2014).

Having briefly extracted two recent lessons from life course theory—health is a lifelong trajectory and health is a dynamic interplay between individuals–populations/environments—I will now return to the 1946 World Health Organization concept of health discussed in Chapter 2 and synthesize it with these two contributions from Life Course Theory. First, it is crucial to examine why the definition has received so much criticism, most of all from philosophers. The WHO definition has often served as a foil for those seeking to contrast their own health concepts with the broad WHO concept. Such criticism is misguided.

The World Health Organization's definition of health, not what it seems

The 1946 Constitution of the World Health Organization includes a definition of health. "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization 1946: 100). That definition remains a source of dispute. The two key objections leveled against the WHO definition are that it foolishly muddles the concepts of health and well-being, and that WHO does not even use its own definition of health (perhaps because of the purported health–well-being muddle). Understanding why these critiques are misguided helps to make it clearer what makes the WHO definition a suitable core for my new pluralistic health concept.

Norman Daniels sees no fundamental incompatibility between the study of social determinants of health and the use of a naturalistic absence-of-dis-

ease definition of health, and chastises WHO for undermining its own health promotion efforts by defining health as the positive presence of well-being:

> the WHO conception erroneously expands health to include nearly all of wellbeing, so it can no longer function as a limit notion. People who actually measure population health, such as epidemiologists, concentrate on departures from normal functioning.
>
> (Daniels 2006: 33)

Daniels is correct that there is no *prima facie* incommensurability between conceiving of health as absence of biological dysfunction and also acknowledging the power of social determinants of health. Echoing Daniels, Daniel Hausman dismisses the WHO definition for "conflat[ing] health and well-being, and, although it has never been formally repudiated, the World Health Organization does not rely on this definition in its attempts to measure health" (Hausman 2015: 18). The problem is that such departures from "normal functioning" only represent some of the ways that health can be harmed, such as in Chapter 2's case study of the Standing Rock Sioux and the Dakota Access Pipeline. The health harms of the pipeline include risks to the "normal functioning" of their bodies (e.g., the risk of oil spills), but the complete set of well-being harms includes more (e.g., the spiritual harms and identity harms). Standing Rock Sioux population health is catastrophically harmed by the Dakota Access Pipeline via affronts to their spiritual well-being and to the linkages between individual/community identity and the natural environment.

The concerns expressed by Daniels and Hausman are related to the objection that the WHO definition of health is too expansive because such a notion risks "the tyranny of health" (Callahan 1973). That is, a broad concept of health could allow medicine to grow hegemonic and claim all matters of well-

being as being under its authority. Health promotion is already used all too readily by various biomedical authorities and lay supporters as an automatic policy justification (Bell 2017; Metzl and Kirkland 2010). For example, medical(ized social) surveillance of pregnant women's bodies is already oppressive (Kukla 2010). This is a very serious issue. Accordingly, Chapter 4 is devoted to defusing this concern, showing that concerns of health hegemony and the so-called "boundary problem" of what is/isn't a health matter both fail as objections to population health science's ambitiously broad agenda of looking in all corners of human social life for the causes and effects of health. The worry that such broad models of health necessarily lead to medical hegemony or tyranny (doctors expanding their social power, etc.) fails because population health science emphatically agrees that medicine is inappropriately powerful as an institution. Population health science is founded on a rejection of the idea that all health matters are automatically the domain of healthcare. Under a population health science philosophy, health may be everywhere in social life, but health governance ought to be participatory and empowering (see argument in Chapter 7, p. 170) and healthcare is only one of many sectors of society responsible for collaboratively and humbly seeking to advance health (see argument in Chapter 8, p. 187).

Anti-WHO definition critiques from applied population health scholars have largely focused on the problem of whether the WHO definition can be effectively operationalized for practical use. Evans and Stoddart's epochal 1990 population health science article devotes considerable space to reviewing the benefits and drawbacks of the WHO definition (Evans and Stoddart 1990). They praise the precision of the competing negative concept of health, while stressing that WHO's definition was left as a lonely "voice in the woods" after its writing (Evans and Stoddart 1990: 1348). In reply, Ronald Labonté —long a critical voice within the population health science community— chastised Evans and Stoddart's ambivalence toward WHO's positive concept

of health, arguing that doing so tacitly perpetuates a "reductionist biomedical theory of health" (Labonté 1995: 166). Nash et al.'s 2016 textbook supports the WHO definition of health and laments its historical neglect (moreover: "now is the time to fully embrace the idea of health as a state of well-being, vitality, performance, and a high quality of life") (Edington et al. 2016: 386). Kindig, arguably population health thinking's most active popularizer, places the WHO definition alongside various other definitions of "health," in his glossary of population health key terms and the discussion thereof, while declining to decisively choose between the positive WHO concept vs. a negative concept (Kindig 2007: 142, 145). Perhaps best encapsulating the concerns of population health scholars, Young's textbook on population health praises the WHO definition for orienting practitioners to think about promoting the presence of health, rather than just focusing on disease treatment (this theme will return in Chapter 5's discussion of "salutogenesis" theory) (Young 2005: 3). Yet, he worries about its practicality and says the key is having an " 'operational' definition" of health (Young 2005: 3).

I agree entirely with Young's point about the need to properly operationalize the WHO concept of health. However, I think Young and other skeptics have misread the WHO definition. The population health science community's reception of the WHO definition as philosophically appealing but practically lackluster leads to the next section of the chapter. Critics have mistaken what the WHO definition is and does: it outlines a *metaconcept* of health, a conceptual framework within which particular operational concepts of health can be specified for particular purposes in particular communities—the WHO definition is not an operational definition to be used in applied research or policy "off the shelf."

The WHO definition of health is not an operationalized tool for health assessment; it is a toolbox that guides the gathering of tools

The WHO definition of health is far too vague to be used as a technical term without modification. The definition simply states, "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization 1946: 100). Much needs to be specified and adapted before use. Bickenbach's survey of the critiques of this "notorious" definition argues that it is insufficiently "susceptible to operationalization" (Bickenbach 2015: 961–962). Critics seem to infer that there is an implied addendum to the WHO definition, "... and this definition should be adopted without modification in health research and practice, and that health cannot include other elements in its holism, regardless of context." I see no reason to infer this. WHO traced out a definition of health—perhaps better described as a meta-concept of health, an outline of a class of health concepts—and left questions of operationalization to the legions of scholars and practitioners to follow. In other words, the question is not whether the WHO definition is the right *tool* for doing population health work; the question is whether the WHO definition is the right sort of *toolbox* for collecting tools for doing population health work. Is it the sort of toolbox that accommodates our current tools, and guides us toward collecting new tools to fill conspicuous gaps in the tool collection? As described below, limiting health to the absence of disease needlessly prevents us from considering health matters that seem overwhelmingly relevant to health. But, as signaled in the above critiques by Daniels and Hausman, defending the desirability of the WHO definition of health also requires rebutting the objection that is often paired with the first objection, the claim that WHO does not actually use its own definition.

As discussed in Chapter 2, Cold War-era US influence stifled the application of social concepts of health due to a combination of anti-socialist politics and technocratic idealism. But, in the 1990s the tide turned (Irwin and Scali 2007). I can think of no plainer evidence that the WHO concept is alive and

well than pointing to the title of the official WHO Twelfth Programme of Work, the "high-level strategic vision for the work of WHO for the period 2014–2019": its title is *Not Merely the Absence of Disease* (World Health Organization 2014). In other words, attending to holistic well-being is not just some incidental component of WHO's plan of action for 2014–2019; it is the organizing principle of its work. Critics can continue objecting that WHO (and the global public health community for whom it serves as leader) ought not promote holistic well-being. But the charge that WHO and its network of public health workers *don't* do such work is simply wrong.

As a broad meta-concept of health, when the WHO definition is used it is not always obvious at first glance. Take, for example, the way that it serves as a basis for "reproductive health" research, going through a two-stage operationalization process to take it from the 1946 definition to population health practice (World Health Organization Regional Committee for Europe 2016: 25). The first step is adapting the WHO definition into a specific health concept suited to the relevant task—assessing and promoting global reproductive health.

> "Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, *in all matters relating to the reproductive system and to its functions and processes*." (International Conference on Population and Development 1994: 40, emphasis added)

This narrows the general WHO definition for application to reproductive health, the area of interests. The resulting definition is non-obvious, grounded in a holistic understanding of health, and hence concerned with more than just the absence of sexual/reproductive pathologies. This definition of reproductive health, according to WHO, "implies that people are

able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so" (International Conference on Population and Development 1994: 40). Using this particular definition makes a pivotal difference in how we measure and intervene in population-level reproductive health. For instance, a population with low rates of diagnosable gynecological pathologies, but in which women are socially coerced to bear large numbers of children, has poor sexual and reproductive health. Under a biomedical concept of health, a negative concept, low rates of reproductive/sexual disease would automatically qualify that same population as relatively healthy and thus having a low priority in reproductive health efforts. WHO is right to assert that a reproductively healthy population is free from reproductive coercion; it strains credulity to say a population has good reproductive health if it is filled with women who are pregnant against their wills.

After the first step of adapting the WHO definition to reproductive health, WHO then performs the second step of operationalizing it in applied health assessment and health promotion ventures. One prominent way WHO is doing that now is through the joint UN-WHO program, Every Woman, Every Child. That program uses a life course model (of course!) to conceptualize the well-being of women as being practically inseparable from the health of children and adolescents due to the global prevalence of social and biological bonds through birth, childcare, etc. (Every Woman Every Child 2015). Accordingly, the program pushes for specific health interventions at important periods in the life course, including HIV screening/treatment in pregnant women, developing "school curricula" that "include elements to strengthen the self-esteem of girls and increase respect for girls among boys," along with strengthening laws and policies to prevent "violence against women and girls" across all periods of the life course (Every Woman Every Child 2015: 21, 61, 89). Since health is so socially contingent and linked to empowerment

(see Chapter 2 on WHO's Ottawa Charter), the program urges: "encourage communities to participate in defining their health needs. Reorient health and development services in response" (Every Woman Every Child 2015: 61). The WHO definition provided the holistic toolbox, which constrained the size and shape of the compartment for the tools used to assess and promote reproductive health. That in turn led WHO to set specific reproductive goals and metrics, looking not just to HIV transmission and other standard biomedical pathologies but also holistic well-being matters, including education, self-esteem, respect, and institutional protections against violence.

Making room for health pluralisms: metaphysical, empirical, ethical, and methodological

Combining the lessons of the first and second halves of this chapter yields an update to WHO's 1946 health concept, an update I see as compatible with the original definition because the original definition offered a loose framework mainly characterized by the commitment to health as the positive presence of well-being in social context. I extend the WHO health concept over the life course, yielding a new definition of health: *health as a life course trajectory of complete well-being in social context*. I conceive of my variation on the WHO concept of health, like the original version, to be more akin to a toolbox than a tool itself. It is a very large toolbox that can fit a huge range of other tools in it. I do not propose this health meta-concept as the sole "correct" health concept. Instead, I offer it as the one that I judge to offer a worthy and non-obvious guiding framework for the many healths that exist in the diverse social world. There is no single universal capital-H "Health." While I offer a definition of health, I wish to nonetheless leave room for health pluralism in four different senses: metaphysically, empirically, ethically, and methodologically. These parallel Chapter 2's argument that there are four different senses of health-as-

social.

Metaphysically, a *trajectory of complete well-being in social context* is pluralistic, but still takes a non-obvious stance. Different populations have different health ontologies—health (well-being) for the Standing Rock Sioux is fundamentally not the same thing as health for the settler US populations that surround them; among other reasons, the statuses of ancestral Sioux lands and waters are inseparable from their spirituality, culture, identity, and well-being. Non-Sioux in the same region can value entities such as Lake Oahe (which is now traversed by the pipeline), but harm to that body of water is only an instrumental harm—usurpation of, or damage to, Lake Oahe is not a harm per se to non-Sioux. Healths vary.

Philosophers of health continue to have valuable nuanced discourse over the metaphysics of health, such as whether it is best conceptualized as a capability (Ruger 2010), a meta-capability (a capability to have other capabilities), or perhaps an ability to reach one's "vital goals" (Nordenfelt 2016). I decline to insist on any of these additional metaphysics of health over and above what is already captured in my posited definition. I think the original WHO definition was right to leave room not only for a plurality of health experiences but also of health metaphysics. As noted in the Standing Rock Sioux case study, and as will be reiterated in the upcoming case study of Aboriginal Australian health, one essential component of equitable and empowering health promotion is respecting others' health concepts. To be clear, my account of health demands more than just respecting Sioux or Aboriginal Australian peoples' *beliefs* about health. Instead, my meta-concept of health demands that we recognize that diverse communities around the world have healths that genuinely *are* different. Health includes all of well-being and is inextricable from social context; well-beings in social contexts will vary widely because the features of well-being and social structures vary widely.

Empirical health pluralism follows quickly from the adoption of a holistic

well-being concept of health. Well-being is a drastically different thing in different populations, reflecting the rather obvious fact that we have drastically different goals, priorities, sexual practices, occupations, climates, diets, spiritual and religious beliefs, and practices, etc. Again, Standing Rock Sioux well-being is, metaphysically, intimately tied to ancestral land and the waters therein. Given that health's meaning and components vary, it is rather obvious that these meanings would manifest empirically in a similar plurality of ways. In a sense, the metaphysical concept of health proposed by WHO is a response to the empirical fact that social contexts—and hence what it looks like to have well-being in those contexts—are diverse. In the face of the abundantly obvious fact that social life and social well-being varies enormously by population, WHO made the decision to embrace that and posit that there is a plurality of healths in the world, situated in the plurality of social experiences.

Ethically, it is unacceptable to impose a culturally incongruous health concept onto a population. A *life course trajectory of complete well-being in social context* foregrounds social context and history. It also intentionally declines to give some top-down decree of what complete well-being is. In the case of the Standing Rock Sioux, this means that fully applying my health concept would require researchers and policymakers to fully include Standing Rock Sioux people in the process of crafting a set of operationalized health assessment tools. Those tools should presumably include means of assessing the population's well-being in light of the land–water–spirituality–identity–health linkages in their social context. For example, future health assessments would likely be substantially enriched by gathering survey data about community members' perceptions of the accessibility and integrity of sacred waters and how this affects the intergenerational transmission of cultural knowledge and practices.

Methodologically, one can accept *health as a life course trajectory of complete*

well-being in social context as the toolbox for health assessment, while fully accepting that most tools used for health assessment will have rather limited ranges of use. Work done under the aegis of any health concept routinely requires measuring only a subset of its components (e.g., measuring incidences of a single disease) (Hausman 2015). I offer the above health concept as a large toolbox that guides us as we collect a repertoire of health measurement and health promotion tools. Many or most tools in the toolbox will also be fully consistent with biomedical concepts of health, such as Boorse's Biostatistical Theory (Boorse 2014). One key contribution of my meta-concept is that it helps show us where there are gaps in our toolset. For example, it inclines a dietary health researcher to ask whether current data collection practices are adequate for gathering the longitudinal (life course) impacts of various diets, rather than just the short-term impacts on biomarkers such as plasma cholesterol levels.

While this chapter lacks the space to systematically contrast my meta-concept of health with every alternative concept or approach, it is worth taking a moment to address the "capabilities approach" to justice and well-being, which is different from my own but remains broadly compatible. This approach has risen to prominence in the global health equity literature thanks to overlapping efforts by Martha Nussbaum (2011), Amartya Sen (2005), Jennifer Prah Ruger (2010), Sridhar Venkatapuram (2011), and Madison Powers and Ruth Faden (2006), among others. Though variously specified by its proponents, it generally conceives of well-being as the presence of certain capabilities in each person, such as the capability to form social relationships with others. Venkatapuram contends that health is, in fact, a "meta-capability" that allows other human capabilities to operate (Venkatapuram 2011). He frames this position as an "extension" of Nordenfelt's earlier work on "health as the ability to reach one's vital goals" (Venkatapuram 2011). While my concept defers to the local social context in order to establish what

"well-being" means in that context, I have no objection to the capabilities approach's list of ten positive traits as one way of specifying a broad social justice mandate to promote complete health and well-being. The health capabilities approach will feature again in Chapter 4's dispute with Powers and Faden's interpretation of the scope of public health and in Chapter 7's account of how population health science and health equity interrelate.

Conclusion: an updated health concept for an expansive population health mission

I argue that there is great value in conceiving of health fundamentally as the positive presence of well-being, and that there is great value in conceiving of that well-being as a trajectory that spans the entire life course. This account of *health as a life course trajectory of complete well-being in social context* is built upon the historical lessons outlined in Chapter 2. That chapter offered a historical account of the gradual recognition among population health experts that health is social: in its metaphysical nature, its empirical causal dynamics, its ethical considerations, and its methodological considerations.

There are two related Life Course Theory insights components that my definition of health incorporates: (1) health should be understood as a long-term trajectory, rather than a momentary state or short-term set of discrete processes, and (2) health should be understood within a dynamic social relationship between individuals and the population-environmental–social contexts in which they reside. These two features are philosophically complementary, since a longitudinal view of health allows one to better see the causal push and pull between individuals and their surroundings; conversely, recognizing that there are such dynamic relationships leads to the next intuitive step of taking a long-term view of health in order to observe the processes and effects of those dynamic relationships.

This chapter updates and defends the WHO concept of health, arguing that the concept sets out the range of what qualifies as a health matter (well-being and social welfare in addition to the absence of disease) and guides researchers in their applied work. The update takes the advice of the burgeoning life course literature and directs population health scholars to fully embrace the notion of promoting health over the life course by defining health as well-being over the entire life course. We may often need to measure health and disease at a single point in time, as if it were a static state or a short-term process. But I insist that we should always keep in mind that, various measurement challenges aside, health is a trajectory that extends over the entire lifespan, developing through dynamic interaction with one's social context. As seen above, it is a conception that has been operationalized in venues such as the 2013 update to cholesterol management guidelines (basing treatment decisions on likelihood of net harm in a patient's foreseeable future) (Finkel and Duffy 2015; Stone et al. 2014), and the 2015 UN-WHO Every Woman, Every Child program, which links health promotion of women and children in a holistic life course attempt to disrupt well-being harms spread across the life cycle (Every Woman Every Child 2015).

The inclusiveness and flexibility of the WHO definition strike a balance between pluralism and specificity. It sets up a range of domains as legitimate components of health. How can we be sure that the WHO definition of health can be used effectively and fortuitously in actual practice? Ultimately, the proof of the pudding is in the eating, so to speak. The next chapter will explore and defend broad models of public health, which seek to address the full set of causes of benefit and harm to populations' holistic well-being, extending far outside the medical realm into areas such as economic reforms to address the health impacts of poverty. Curiously, though, such broad models of public health action have faced some of its staunchest opposition from philosophers of public health, who have been concerned about the "boundary

problem" of where to draw the boundaries for the domain of public health, fearing that a lack of such boundaries would be philosophically untenable or practically disastrous. But first, this chapter will conclude with a case study of what a holistic life course perspective offers to the ongoing efforts to reduce inequitable health disparities between Aboriginal Australians and settler Australians.

Case study: addressing health disparities between Aboriginal Australians and settler Australians

Much rests on the definition of health used to develop population health research and interventions. Approximately 3 percent of Australians are Indigenous People, which includes Aboriginal Australians (90 percent of the Indigenous population), the smaller Torres Strait Islander population (6 percent), and those who identify as both (4 percent) (Australian Institute of Health and Welfare 2014: 297). Brutal colonial settlement decimated the population, in a variation on the well-known colonial tropes of land displacement, legal disempowerment, denial of suffrage, etc. The effects on the geographically diffuse population of Aboriginal Australians have been devastating—poverty, lack of access to schools, overcrowded housing, low rates of home ownership, and a multitude of other social disparities reinforcing patterns of relatively poor health in virtually every measure (Australian Institute of Health and Welfare 2015). A 2008 joint local–national government initiative committed the country to "Closing the Gap" (echoing the title of the landmark WHO social determinants of health report from the same year) (Commission on Social Determinants of Health 2008; see history in Australian Institute of Health and Welfare 2015). Focusing on Aboriginal Australians for the purpose of this case study, we can see how the evolving strategies for effecting health and well-being reforms to promote equitable treatment of Aboriginal Australians

combine holistic social well-being concepts and Life Course Theory in population health promotion. Taket has explored the human rights dimensions of Aboriginal Australian health efforts, but here I am focusing on the role of health concepts (Taket 2012).

A 2015 government report reminds readers that, "[c]entral to 'Closing the Gap' is the recognition that good health is not determined solely by the presence or absence of pathogens and the failure of bodily functions," citing factors such as employment, housing conditions, breastfeeding, and various other factors (Australian Institute of Health and Welfare 2015: 3). The report goes on to explain that this multitude of social determinants indicates that a life course approach to interventions is wisest:

> the earlier in a person's life that health and welfare interventions occur, the better the outcomes for that person later in life ... possibilities for closing the gap are much greater when there is a focus on families, and on maternal and childhood health and welfare, including living conditions.
>
> (Australian Institute of Health and Welfare 2015: 3)

This is partly illustrated by Figure 3.1, which shows that diabetes rates and risks disproportionately afflict Indigenous Australians even in young adulthood, quickly building from there to devastatingly high rates in middle age and beyond.

The deep social roots of these health disparities in Australia call for models of measurement and analysis that are suited to detecting colonialism's socially embedded causes of health harm and detecting socially embedded well-being effects.

The national government's current strategy for Aboriginal health is committed to the principle: "There is a full and ongoing participation by

Aboriginal and Torres Strait Islander people and organisations in all levels of decision-making affecting their health needs" (Australian Government 2013). The government of Australia has explicitly adopted a commitment to a life course approach to the health of Indigenous Australians: "A life course approach is necessary in order to address the inter-generational mechanisms that impact on health inequalities" (Australian Government 2013: 27; see also Government of Western Australia Department of Health 2015: 10), though these commitments come with challenges. For example, a national-level health promotion framework for the years 2013–2023, and a state-level framework for the years 2015–2030 (among other such efforts) are both ambitiously long-term and yet also too short term to be capable of showing a full range of life course effects. Take, for example, efforts to address disproportionate rates of chronic disease and low birth weight. Inadequately managed chronic diseases such as diabetes (especially if undetected and unaddressed during prenatal care) are a cause of low birth weight (Government of Western Australia Department of Health 2015). Low birth weight is, in turn, a cause of diabetes in adulthood (Harder et al. 2007). But disrupting this cycle at one or multiple points in the life cycle will only yield limited measurable impacts until the adult health of yet-to-be-born children can be assessed, though other goals, such as the recruitment and retention of a larger Aboriginal health workforce (expanding capacity for culturally appropriate care), can be achieved and measured in shorter timeframes (Government of Western Australia Department of Health 2015).

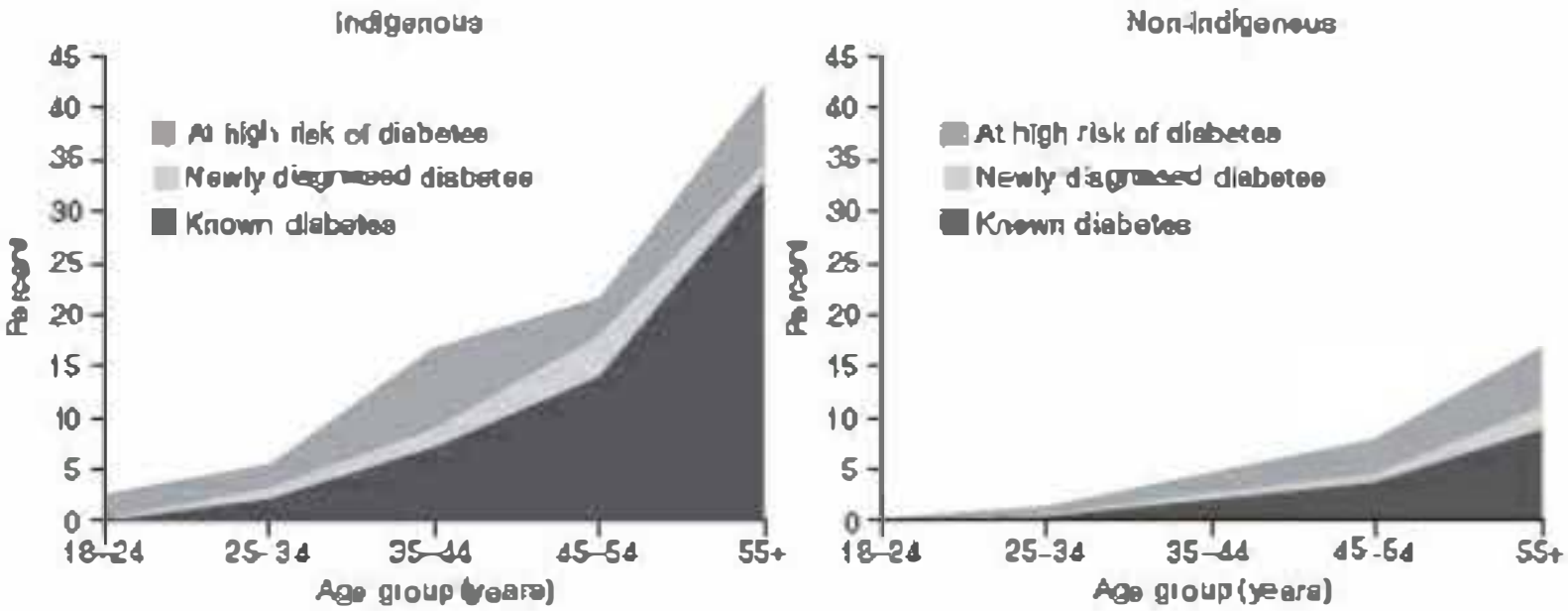

Figure 3.1 Age-specific prevalence rates of diabetes and those at high risk among people aged 18 and over, by indigenous status, 2012–2013.

Source: Australian Institute of Health and Welfare 2015: 93.

Since health is inseparable from social context—in my view and in the view adopted by the previously cited efforts in Australia—population health promotion cannot proceed effectively without carefully identifying the social dynamics at play. As Jayasinghe frames it, the nuances of colonialism and racism make Aboriginal Australians "a world apart from the lives of civil servants in Whitehall" (see Chapter 2 on the groundbreaking Whitehall Study). We cannot simply assume that whatever does or does not work for addressing the classist health disparities Marmot et al. first identified in the UK, will similarly work in Australia (Jayasinghe 2011: 2; Marmot et al. 1984). Australia is working to overcome that challenge of context-specific social dynamics of well-being by first accepting that dependence and then crafting interventions that leverage those powerful social contexts to solve health problems.

A vital component of the Australian response has been to make culture and local social knowledge central, as outlined in the 2013 national-level report (Australian Government 2013) and further developed by a state-level report:

- *Ethical commitments*: "cultural security" is a "guiding principle" (Government of Western Australia Department of Health 2015: 1).
- *Leadership*: "The Framework has been developed for Aboriginal people by Aboriginal people" (Government of Western Australia Department of Health 2015: 3).
- *Research Methods*: "Aboriginal community control and engagement" (Government of Western Australia Department of Health 2015: 1).
- *Targets for interventions*: Another government report: "Connection to land, spirituality and ancestry, kinship networks, and cultural continuity are commonly identified by Aboriginal people as important health-protecting factors. These are said to serve as sources of resilience and as a unique reservoir of strength and recovery when faced with adversity" (Zubrick et al. 2014: 104).
- *Goals*: "Building community capacity" and "A strong, skilled and growing Aboriginal health workforce" (Government of Western Australia Department of Health 2015: 1).

Western Australia literally puts "culture" at the center of the diagram for its framework for health promotion of the Aboriginal population of the state. This reflects an ethical commitment to cultural "integrity" and "security" and a pragmatic recognition that its efforts to promote health and well-being will fail if they are not carefully tailored to the cultural context (Government of Western Australia Department of Health 2015).

This case study has particular philosophical import because it has been previously presented as an exception that illustrates the weakness of WHO's concept of health. Boddington and Räisänen argue that an Aboriginal Australian definition of health is incompatible with the WHO definition (Boddington and Räisänen 2009):

> Health is defined not only as physical, mental, and social but also as cultural. And several aspects are incorporated into the definition of health, notably reference to the whole of the life course, self-determination, community and culture as well as dignity and justice.
>
> (Boddington and Räisänen 2009: 57)

While I agree with most of their other aims and arguments, I argue Boddington and Räisänen misinterpret WHO's very inclusive definition of health when they take it to be exclusive of anything not expressly mentioned therein. Their critique of the concept for being too narrow makes a similar misstep, as the previously discussed critiques, that it is too broad (Daniels 2006; Hausman 2015). It is a strained interpretation of "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" to read this as exclusive of cultural variation. In fact, one of the benefits of incorporating Life Course Theory into the WHO holistic health concept is that it links new Western bio-medical knowledge with the older knowledge of Aboriginal Australians.

Participatory and locally appropriate processes are absolutely vital to population health promotion for ethical reasons, but it is easy to forget that this is also because the flow of knowledge should flow in both directions during interactions between population health practitioners and the populations being served. The case of the dynamics of settler–indigenous health policies in Australia is particularly illuminating since Boddington and Räisänen show how the Aboriginal Australian concept of health includes a "temporal holism" that Australian policymakers recognized for its connection to a "lifecourse approach" (Boddington and Räisänen 2009: 61). While "temporal holism" is deeply embedded in Aboriginal culture, mainstream epidemiology only started to incorporate its parallel concept of life course health in the 1990s

(Shanahan et al. 2016).

Aboriginal Australians were forced to wait for non-Aboriginal health scientists to catch up theoretically and gradually prepare themselves to accept an understanding of health causation and metaphysics that had long been part of the overarching Aboriginal Australian knowledge system. And that is finally paying off in venues such as the 2015–2030 health promotion framework for Western Australia (Government of Western Australia Department of Health 2015). This chapter's case study and the previous chapter's case study on Standing Rock Sioux health both illustrate how and why health promotion in indigenous populations requires careful implementation of lessons from population health science, and how population health science requires implementation of lessons from Indigenous populations.

Notes

1 Life course theory is distinct from evolutionary biology's "life history theory," which Griffiths and Matthewson have used to help resolve objections about whether a naturalistic concept of health can properly account for normal bodily changes during aging (Griffiths and Matthewson 2016).

2 It is possible to reconcile a naturalistic more or less Biostatistical concept of disease with an acceptance of a positive concept of health; Williams does this by splitting disease and health such that he gives a disease account similar to Boorse's but concludes with a qualified endorsement of the WHO concept of health: "WHO overstates what is needed for health," but, "the denial that health is merely the absence of disease is surely correct" (Williams 2007).

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