AFTERWORD

Looking Forward

Peter J. Whitehouse and Daniel R. George

Etymology can inform futurology. In other words, understanding how the meanings of words change through time helps us understand not only how we use them now, but also how they might become tools to imagine and create different futures. As this book, *Preventing Dementia? Critical Perspectives on a New Paradigm of Preparing for Old Age*, ably demonstrates, words like "Alzheimer's" and "dementia," and even "aging" itself, have changed over time, and undoubtedly will (and should) change in the future. But what about the word "prevention" itself? And how does it compare to "cure"—the apparent dominant goal of medicine and in the brain-focused disciplines of neurology and psychiatry?

"Prevention" is a word that literally means "anticipate the future." In the context of health, it guides our actions toward identifying and maintaining wellbeing in the present to avoid future suffering and disease. Juxtaposed with the meaning of "prevention" is the concept of "cure." This word points toward identifying, fixing, and eliminating a disease even in older people in the latter stages of life, including those who are near death. Such is the case with so-called Alzheimer's disease, an illness that had its origins long in the past. Cure is fundamentally about diagnosis and therapeutics rather than maintaining health, although it can also represent an effort to return to a healthier nondiseased state. As opposed to prevention, which looks to the future, "cure" connotes returning to a desired past state.

The Alzheimer's Association and its aligned experts in the United States and elsewhere often state the ultimate goal of research is "finding a cure." Claims have been made for decades that we will possess something like a cure in just a few years; conventionally, predictions are projected to arrive at the end or mid-point of decades (e.g. 2020, 2025). These arbitrary and false promises drive their fund-raising efforts. Whereas the field tends to be organized around this logic, we believe it represents an unrealistic objective and a misalignment of priorities. The prospect of "curing" an age-related

This chapter is from "Preventing Dementia? Critical Perspectives on a New Pradigm of Preparing for Old Age" edited by Annette Leibing and Silke Schicktanz https://doi.org/10.3167/9781789209099. It is available open access under a CC BY-NC-ND 4.0 license thanks to the support of the Social Sciences and Humanities Council of Canada. Not for resale.

dementia raises key conceptual and practical questions. For instance, to what healthier state and age would a person be expected to return? If we cure diseases, can they not reoccur and—if we were to cure all diseases—would we be preventing death itself?

Prevention occupies a different conceptual/practical space. It is not necessarily concerned with "defeating" death but rather developing strategies to delay it and to improve quality of life. In broad evolutionary contexts, death is a part of a species adapting to environmental changes by bringing new genetic combinations into the population through sexual reproduction and replacement of older with younger organisms. Seen this way, death is not an enemy to be vanquished through salutary consumer and physician choices.

But cure has a hidden side. The root in the Latin is "cura" meaning "care," "concern," or "trouble." So when we separate out, as modern medicine too often does, caring from curing, have we have obscured a key part of the etymologic lineage? When the Alzheimer's Association calls for "Care today; cure tomorrow," just what are they asking for—a permanent absolute cure today so we need no care tomorrow? And one might ask, where does prevention fit in this mantra?

Prevention efforts are dynamic and ongoing and can occur at any point in the process of disruption of health (primary, secondary, tertiary) in an individual or in a community. In the case of dementia, we are referring to maintaining brain and cognitive health. How can we stay mentally healthy together? Prevention also points to ecology because it requires a healthy relationship to the natural world for humans to enjoy full wellbeing (for example, forest fires and drought do not create conditions conducive to preventing illness). The Covid-19 pandemic has also served as a wakeup call about the importance of public health, the vulnerability of the elderly (particularly with dementia), and the essential workers in our society who are often unappreciated and underpaid (including caregivers in residential care). The global crisis caused by the virus perhaps foreshadows the even greater challenge of climate change and resultant weather weirding that lay ahead. At an individual level, interacting with nature has been shown to provide health benefits. At a population level, exposure to toxic and unsafe environments are deleterious for communities. Community programs and social engagement through supportive relationships are also keys to preventing illness. Discrete diagnoses and labels are not as critical for prevention as for medical practice where an allegedly precise diagnosis leads to a specific drug or biologics. Prevention is broader in scope; efforts directed at brain health will help heart health and vice versa.

Models of health need to include biological levels, psychological aspects, and social factors. The word "biopsychosocial" is often used to point be-

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yond a purely biomedical model of health. But as we look to the future, an even better concept may be "ecopsychosocial," which suggests that ecology, rather than the usual molecular/pharmaceutical reductionist framework, is the way to frame the biological aspects of health. The foundation for ultimate effective prevention is evolutionary medicine, where genetic and environmental interactions are studied over time. For example, we could prevent much more brain disease from infections if we understand how bacteria, viruses, and fungi interact with human bodies and evolve over time, including developing resistance to our drugs through genetic mutations.

In our era, efforts at both cure and prevention of dementia are commonly associated with individual health. Capitalism has powerfully shaped us as discrete entities, and has set up a proposition whereby "prevention" of memory loss is a function of individual consumption habits or lifestyle choices. But other meanings are possible, especially if we make a stronger effort to break from the dominant model of individual lifestyle adjustment and regard prevention as a collective endeavor. Such a reconceptualization demands that we situate prevention not within free markets but in terms of community and public health. In order to enhance our public health efforts toward population health and prevention, we need to understand more about our near-obsession with large-scale funding efforts to find cures for brain and other diseases.

The Misunderstandings of Cure

Biomedicine claims to be seeking cures—such is the promised product of molecular genetic medicine and big data analytics. But cure of chronic age-related diseases is extraordinarily challenging, and perhaps, some would say, a quest for fool's gold. As alluded to above, are we in effect trying to cure aging when we tackle such conditions? The quackery of the anti-aging medicine field certainly promises such possibilities. And too often the goal of medical care is to delay death rather than enhance remaining quality of life. Moreover, curing often means treating early (or so the experts say), so we get not only diagnoses of disease, but pre-diseases. So now we must treat mild cognitive impairment (which represents some objective intellectual decline with no effect on function in daily life) and even subjective cognitive impairment (no problems on neurological or psychological testing or function). These labels make more people diseased by applying an arbitrary threshold to cognitive decline. But the therapeutic fanatics want to go further and treat "normal" people with risk factors and/or often unreliable and unvalidated biomarker findings.

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Ultimately, the alliances among fame-motivated academic experts, profit-seeking pharmaceutical companies, and branding-oriented lay organizations exaggerate the likelihood of, and benefit from, finding such cures. Not only that, they usurp the true hope of effective public health models, of prevention through educational and community interventions. Their focus is on treating individuals to allow financial gains to flow to a few, instead of focusing on social benefits for many.

Why do doctors talk about cure more than prevention? Could it be that cure has intellectual property, possible commercialization, and professional power associated with it? The attraction of fame and fortune offered by the unholy alliance of unskeptical scientism and unbridled capitalism is strong. Prevention is more the province of individuals and communities and more often of nonprofit organizations than for-profits. Of course, some nonprofit groups are shills for commercial concerns, but generally art, music, public health departments, and many other elements of society are part of our preventive health infrastructure. Even so, these areas are relatively unfunded compared to the almost 20 percent of gross national product we spend on medicine—likely because preventive measures are more difficult to monetize than cures. Doctors, researchers, and diagnostic companies may "own" diseases, but we all own health.

In this volume, the authors help us interrogate prevention in the dementia field not only with broad strokes, but also in fine detail. Collectively, their work reminds us that prevention is a contested space which, when explored, challenges us to understand more deeply just what the object of our prevention efforts (Alzheimer's disease and dementia) are all about. It is important to foster such inquiry into our concepts of prevention in our current milieu. Again, an investigation of etymology—the powerful meanings words have to guide our actions in a given historical-cultural moment—can be a gateway to better meanings and actions for the future.

The Dominant Language of Cure

Most of the "cure" language in both the lay press and academic literature focuses on Alzheimer's rather than dementia. Here, the illusion can be created, although increasingly difficult to maintain, that a single condition can be met by the appropriate powerful single intervention. This understanding—which we have deemed a "myth" as it pertains to brain aging (Whitehouse and George 2008)—is now failing to the point of folly. Speaking of etymology, practically no one thinks "Alzheimer's" is a singular noun unrelated to aging anymore. Instead, decades of research have taught us that it/they is/are heterogeneous and clearly related to aging. Were we to

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advance our definition of the concept, we would more properly refer to "Alzheimer's diseases" (plural) or "Alzheimer's syndrome"—constructs that better reflect the mixed nature of most dementias.

Some claim to want to "cure dementia," but they are either confusing the words "dementia" and "Alzheimer's" and/or being illogical. "Dementia" by definition includes a variety of (overlapping) conditions. Again, objectively, curing either Alzheimer's or dementia would require *cures* (plural). Experts claim that the clinical response to this heterogeneity in dementia will require employing a panel of diagnostic biomarkers to characterize each patient and to match the pattern of results to individualized therapeutic "cocktails" (multiple drugs and biologics). But at what cost we might ask? Tens of thousands of dollars per year per patient repeated over decades? But the opportunity costs to imagination are even greater. Prevention offers not only more bang for the buck but a social transformation that would in itself be healthier than current market-driven promised solutions. Improvements in the quality of air and water, better public transportation, full employment, more opportunities for formal education and social learning, healthier food, anti-smoking campaigns, robust social welfare (and the list goes on) would not only benefit those with dementia or at risk but people with other health conditions.

In the past few years, the on-and-off-again, non-transparent process by which we have been led on by the major pharmaceutical company Biogen about its failed, and then resurrected, studies of the drug aducanumab (an anti-amyloid antibody and alleged "disease-modifying therapy") and the company's promised, but delayed, submission to the FDA illustrate the distorting profit-oriented approaches of pharma. Ultimately, such machinations of the private market lead us to see that we would be wise to resist the dominance of current unhealthy biomedical models and instead reconfigure the economic and political power structure in society. Prevention benefits the many, and cure, the few. Touted cures that do not deliver benefit even fewer.

The Politics of Cure

"Neoliberalism" is the current label for the convergence of political, social, and economic forces that, since the 1970s, have fueled the dominance of global capitalism and the retrenchment of the state from public life. The two essential aspects of neoliberalism are promoting individual responsibility over collective caring, and enacting market fundamentalism that expands free enterprise, deregulates market economies, weakens organized labor, and defunds the social welfare state. Neoliberalism regards unfettered

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free markets—rather than governments—as the most efficient means of organizing society and meeting the needs of individuals. As such, its proponents believe the state ought to pull back from social and economic affairs, reduce public spending, and let markets function autonomously, fueled by profit and competition. Such hypercapitalistic conditions precipitated the Great Recession that cratered the global economy, ushering in an era of massive inequality and austerity that has destabilized the world and left us vulnerable to ongoing economic shocks.

So, too, has neoliberalism shaped the Alzheimer's space, and, as alluded to above, the predominant emphasis on individual lifestyle to prevent dementia rather than community health efforts is a key example. Asking individuals to eat a better diet or wear a fit-bit and exercise more is fine except when such opportunities are not available in poor communities (for example, neighborhoods that are food deserts and where it is unsafe to walk, or workplaces that require hours spent sitting a day). Asking individuals to take charge of their own prevention is virtually impossible when they live in communities like Flint, Michigan, that have lost massive numbers of jobs and have endured austerity politics that have produced public health crises like lead poisoning in urban drinking water, damaging the brains of community members (mostly the poor and people of color). Attempts at "preventing Alzheimer's" can no longer ignore these critical structural factors that degrade peoples' brains, and we cannot continue allowing market-based, individualist approaches to brain health to depoliticize the clear political-economic contributions to illness across peoples' life spans (George and Whitehouse, forthcoming).

Further, deregulated or poorly regulated markets, like the ones governing supplements and nutraceuticals, may produce massive wealth for companies but present dangers to those concerned about prevention. Companies have too often seduced people into buying unproven products that essentially promise miracle cures, leveraging the credulity of desperate consumers and exploiting the lack of oversight. So, too, is the digital world full of expensive brain fitness computer games that exaggerate their claims to improve cognitive performance in life or even prevent dementia. Digital technologies, mixed augmented and virtual realities, smart homes and communities, and social networks will be part of the answer to human cognitive challenges, but we need help to evaluate what is truly helpful and what is likely harmful. People with dementia and all of us with limited memories can be assisted by digital assistant devices and perhaps even eventually robots. Safety at home can be monitored and social isolation potentially alleviated through smart technologies and network connectivity. But there is a danger that, as with expensive diagnostic and biologic therapeutics, the opportunity costs associated with wasting time, money, and

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effort on false promises of technology are real and are a diversion from underlying social, economic, and ecological factors that affect people's brains.

The Success of Prevention

One of the more remarkable findings in the recent past is that the prevalence and incidence of dementia in some Western countries (the United States, the United Kingdom, Canada, France, Sweden, and Norway) has been trending down over the past decade. This is best attributed not to any drug or commodity produced in the vast "marketplace of memory products," but to population-level interventions in the mid-twentieth century, such as increasing public access to higher education and better quality food, reduced smoking rates, and perhaps even removing lead from gasoline. Today's elders, who had their formative years as recipients of massive state investments in public wellbeing in the era following World War II and the Great Depression, are now ostensibly enjoying the downstream benefits of those "exposures."

Such findings underscore the value of social democracy as a "preventative measure" for dementia. In contrast with the individualistic and laissez-faire ethos of neoliberalism, social democracy is committed to maintaining high levels of equitable wealth distribution and income equality, using progressive taxation to provide universal services as a right for all (health care, housing, child/elder care, and education, social security, etc.), creating the basic conditions for more humane outcomes for all its citizens. Where neoliberalism reigns, health and happiness seem to be declining, and social unrest is rising (for example, Brexit in the United Kingdom, Trump in the United States, the yellow vest movement in France). Those countries have also fared among the poorest in the world in the COVID-19 pandemic. Frustratingly, the Alzheimer's field—largely dominated by the United States—has prioritized free-market, technological solutions to the challenge, and has been largely inattentive to questions about how the social organization of our societies impacts risk for brain aging at the population level.

In many ways, approaches to Alzheimer's go beyond the disease itself because a consideration of what it means to conceptualize and prevent "Alzheimer's" can serve as a gateway to asking larger questions about what kind of societies we want to have. Medical labeling and overdiagnosis dominates our thinking about health in many other domains besides dementia and particularly in conversations about age-related conditions. If we look beyond our fear and fantasies and find true hope rather than false promises, the benefits of thinking about dementia differently will reap benefits

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for all of us, regardless of health conditions. We need to take individual and collective brain health to a new level. It is not just about diet, exercise, and other self-directed consumption patterns. It is deeper and broader: it is about purpose and community, about shared investments in our collective wellbeing, about protecting our shared ecological home, planet Earth. In order to create flourishing communities that can adapt and sustain themselves into our challenging future, we need to have realistic and prioritized goals. Curing so-called Alzheimer's disease needs to be viewed in a clear-eyed way as unrealistic, and efforts cut back. Preventing dementia and enhancing brain health through public health is where the focus should be. Realigning these priorities will disrupt neoliberal medicine and society but lead to better wellbeing for all. Beginning with an exploration of the meaning of words and the meaning of our individual lives and collective life on the planet will ultimately lead to a better future.

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