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12-1-2017

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Peter J. Whitehouse

Case Western Reserve University, peter.whitehouse@case.edu

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Jonathan Beever*, Peter J. Whitehouse**

The Ecosystem of Bioethics: Building Bridges to Public Health

ABSTRACT

Understanding bioethical inquiry as ecosystem aligns that thinking about health conceptually close to public health ethics. Despite having roots in decades-long, culturally-diverse, and disciplinarily-broad concerns about the relationships of human beings to environment as manifest in the work of Fritz Jahr and Van Rensselaer Potter, medical “mainstream” bioethics has maintained a relatively narrow focus on individual health. The practical instantiations of bioethics are inconsistent both with the term’s own historical international contexts and the ecosystemic nature of health, a concept of systems that includes both cultural and biological interactions. Following a growing number of international calls for such change in bioethics, this paper argues that a reinvigoration of bioethics demands transdisciplinary intersections of ecology, value, and health – as a bridge connecting across to the identified projects of public health ethics.

Keywords: public health ethics, bioethics, ecosystem, interdependent, genealogy, environment, transdisciplinary, Jahr, Potter.

1. A Bridging Problem

Following a growing number of calls for a broader conception of bioethics (Beever and Morar 2013; ten Have 2013; van Bogaert and Ogunbanjo 2010; Pierce and Randels 2009; Lolas 2008; Whitehouse 2003; Robles 2000; Potter 1999), we argue that a reinvigoration of bioethics as directly relevant to the intersections of ecology, value, and health aligns bioethics with public health ethics. Thinking ecosystemically about health is necessitated by globalization of human communities (the global public)

* Department of Philosophy, The University of Central Florida, Orlando, USA.

** Department of Neurology, Case Western Reserve University, Cleveland, Ohio, USA.

Correspondence Address: Jonathan Beever, Department of Philosophy, The University of Central Florida, 4000 Central Florida Blvd., Orlando, Florida, 32816, USA. E-mail: Jonathan.beever@ucf.edu.

and the anthropogenic changes to those communities' environments. Indeed, the 21st century world of the Anthropocene, threatens to become a place less hospitable to human and other species' communities because of human-created environmental threats. Of central concern is global climate change, contributing to overall warming and weather weirding (dramatic fluctuations in local meteorological conditions). Such change in turn leads to a host human and ecological community harms (e.g., MacPherson 2013). From shifting disease patterns as a function of redistribution of environments suitable for disease vectors to conflicts over carbon-based fuel sources and water supplies, ecological change is already contributing to human suffering, not to mention massive extinctions of other forms of life. More locally, communities across the global face additional threats from the overuse of chemicals in industry, health care, and agriculture, some of which are clearly dangerous to life (such as heavy metals, pharmaceutical drugs, and pesticides), and many of which have an unknown impact. Such forces threaten species diversity as well as human health that in turn threaten the essential function of life in responding to change. Related to these specific environmental threats are economic and social inequities, which themselves contribute to additional threats to health (Gardiner 2011; McMichael et al 2006). Such threats have clear ethical implications for both the health of individuals and for the health of the collective public; yet, the complexity of those ethical issues is often left out of the conversation about health. For example, in a 2014 report from the U.S. Institute of Medicine (IOM 2014) on integrating primary care and public health, there is no mention at all of ethics, despite the important role ethicists can play in questions of health-related issues. And when ethical issues *are* considered, they are analyzed through narrow disciplinary silos. On one side of the conversation, inward-looking and individual-focused mainstream bioethics maintains its dominance, codified and institutionalized as it is in clinical and academic settings. On the other side, community focused public health ethics looks broadly at systems of conditions that support or oppose population health. While a handful of scholars (Fox 2001; Pierce and Jameton 2004; Moreno 2005; Jameton 2005; Jennings 2016) have addressed what neurologist and bioethicist Peter J. Whitehouse has called the "Ecomedical Disconnection Syndrome" (1999) beneath this polarization of thinking about the relations between individuals and environments, fundamental moral issues relating to current and future responsibilities for each other, generations yet to come, and other life forms remain largely unaddressed.¹ Bioethics can only be effectively reinvigorated when seen as a necessary component of a transdisciplinary framework of health that bridges concerns of individual health from mainstream bioethics and

1 Whitehouse's use of the neurological term "disconnection syndrome" in his case study of the development of The Hastings Center suggests that areas of ethical thought are literally not connected in our own brains, as well as in cultural and academic spaces. Mental connections among areas of inquiry and action bridges, sometimes isolated from one and another, are necessary to create a transdisciplinary bioethics.

questions of ecosystemic health from public health ethics.² First, we offer a critical description of one side of this conceptual gap, arguing that mainstream bioethics, especially in the U.S. context, is conceptually and methodologically too narrow despite its institutional momentum. Second, we critically describe the opposite side of the gap, arguing that public health ethics is conceptually and methodologically too broad despite its important understanding of the systemic nature of health concerns. We then argue that bridging this chasm requires a transdisciplinary approach: but from where can we find material to construct that bridge? In the final section of this paper, we answer this question by looking at the international genealogy of bioethics to demonstrate that practices and concerns about the natural environment and other key public health concerns already exist within the conceptual history of the term. Finally, we argue that a transdisciplinary, ecologically-focused bioethics can align with and help guide our approaches to public and environmental health, promoting the sustainability and flourishing of human and nonhuman communities alike.

2. The Limited Scope of Contemporary Bioethics

Medical bioethics, the mainstream of professional bioethics, has focused primarily on evaluating biomedical solutions to individual human disease and suffering at both disciplinary and institutional levels of organization. As a discipline, mainstream bioethics has focused on responding to and codifying responses against cases of medical tragedies in the early twentieth-century, like the U.S. syphilis study at Tuskegee and the experiments at Nuremberg, and has more recently focused on issues related to medical technologies in response to a view focused on defending human autonomy and uniqueness. Indeed, the history of mainstream bioethics is tightly bound up with the history of human subject abuses. After World War II and the resulting discussions about global human rights in the context of medical experimentation (HHS.gov 2014), medical experimentation on human subjects also underwent sharper critique in both European and the U.S. contexts. Developing out of the 1947 Nuremberg Code, the 1978 Belmont Report, the Nuffield Council of Bioethics (Nuffield online), and the Fondation Brocher (online), the history of mainstream bioethics begins with the history of medical ethics. "...[B]ioethics can be seen as a modern version of a much older field of thought, namely medical ethics" (Kuhse and Singer 2010, pp. 3-4). An important shift came, in large part, from the work of the Hastings Center that focused attention on the implications of human nature and culture shifting under the novel growth of medical and biotechnologies (Callahan 2009). This focus, scaffolded upon the medical and clinical orientation of

2 For the sake of this argument, we set aside other parallel conversations in environmental ethics, although they are open to the same critique of siloing.

what became the Kennedy Institute (Reich 1995), gave “mainstream” bioethics its contemporary orientation around the human impact of biomedical technologies. Later, the Center for Humans and Nature founded by Strachan Donnelly, also one of the founders of the Hastings Center, continued to extend the environmental aspects of a broader bioethics (see Whitehouse 1999).

Institutionally, medical bioethics has grown to be the most well-funded and publically visible ethics field in the realm of professional ethics. Its practical importance has been solidified by its inclusion in a range of institutionalized education and training components from the hospital ethics boards, where decisions of life and death are considered, to institutional review boards influencing vast research enterprises, to teaching curricula, to professional development, and to training requirements from funding agencies. From the standpoint of the goal of applied ethics - namely, to use academic normative ethics to address capabilities for practical matters - bioethics is a resounding success as a field barely half a century old. Yet, bioethics has too often served the goals of medicine rather than critically examining them within a complex and developing epistemic and ethical landscape. Tragically, doing bioethics professionally *demand*s a medical focus specifically because that is where the money is locally and more globally (Lee 2012) – focusing on the human being in biomedical contexts allows bioethics to thrive. This medicalization is all the more tragic, given that medicine, particularly in the United States where bioethics has grown so rapidly, faces compounding problems of increasing costs, technological domination, and poor outcomes. Given this disconnect between the complexity of bioethical issues and the narrowly constrained focus of contemporary bioethics at both disciplinary and institutional levels, mainstream bioethics does not rest on a broad enough foundation to address the future of the health of our species, epistemologically or ethically.

Other approaches to bioethical inquiry, including feminist and narrative-based approaches, offer potentially more robust access to the role of relationships. Feminist approaches, under the impetus of Nel Noddings (1992; 2003) and others, argue that caring and interrelationships form a stronger moral foundation than intellectual discussions about shared principles. Informed consent, so central to research ethics, is as much about trust in community as it is about rational and autonomous decision-making (see Traphagan 2013, p. 142). Narrative ethicists tell us that balancing principles cannot be done in the abstract thought space but in the messy stories of human lives in relationship to each other (McCarthy 2003, p. 67-8). And with the exception of some narrow focus about the appropriate instrumental use of nonhuman animals in research contexts (see Russow 1999 and Nuffield Council 2005); mainstream bioethics largely ignores moral considerations of relationships to non-human species, especially non-animal living creatures like trees. Like the

narrowness of scope problem, the problem of relationships for the autonomy-focused approach in bioethics is as much or more a function of the orientation of the mainstream field than with the methodology. Organizational scholars often refer to the “ecosystem” of relevant conceptual arenas engaged in a particular domain of human activity. Overcoming the limits of narrow focus, a new ecosystem of thinking about bioethics is warranted. The “ecosystem of bioethics” illustrates this point; i.e., that ideas about what constitute bioethics as a field are complexly interrelated and interact over long time periods in a cultural space, just as biological units do in the physical space of a natural ecosystem. Transdisciplinary approaches tap into the power of the blurred boundaries among disciplines, where, just as in ecosystems, much of the evolution of life actually occurs.

The critique, we have outlined so far, is not uniquely ours. Similar critiques of mainstream bioethics have been presented regularly, although none have gotten adequate traction. Austrian philosopher and counter-cultural critic, Ivan Illich, for example, weighed in on mainstream medical bioethics in the form of a brief statement drafted with Dr. Robert Mendelsohn in 1987. In that statement titled “Medical Ethics: A Call to De-Bunk Bio-ethics” and later published in a collection of essays, Illich and Mendelsohn claim bioethics has fundamentally misconstrued the value of being alive.

“Since 1970, bio-ethics has spread like an epidemic, creating the semblance of ethical choice in an intrinsically unethical context. ... medicine has ceased to look at the sufferings of a sick person: the object of case has become something called a human life. ... We consider bio-ethics irrelevant to the aliveness with which we intend to face pain and anguish, renunciation and death” (Illich 1991, p. 233).

This bold statement aligns with the critique we offer above: mainstream bioethics propagates a complex value bias across and through our thinking about and practice of health, upholding life above living and the individual life above the network of living. The misuse of antibiotics in the often-vain attempt to prevent the death of one person leads to the emergence of resistant organisms that contribute to greater human and ecosystem health concerns is one example. The futile over-use of technologies to prolong the quantity of life that often impairs the quality of remaining life is common. The conflicted and often hugely remunerative financial relationships between doctors and those who sell particular profit-making products linked to specific pharmacological or device-oriented interventions are intensely problematic.

Critiques like these are the critiques of the disciplinary formation of mainstream bioethics, a formation guided by a specific and specifically narrow ethical and

epistemic scope.³ The ethical focus of mainstream bioethics remains on individual human welfare in the narrow epistemic context of clinical medicine; and yet, as argued above, human welfare is intertwined with broader impacts of environmental welfare, social stability, and interrelationality. As others have already argued (Bayer and Fairchild 2004: 473; Baylis, Kenny, and Sherwin 2008: 199; Lee 2012: 2), mainstream bioethics, as we've defined it, is not a sufficient starting point for broader normative work. Yet, were it more richly connected to such traditions, like public health ethics and other health-related endeavors, bioethics could be a force for change in our very conceptions of the nature of health. Clearly some progress on integration has occurred, but major impediments to a more fully transdisciplinary bioethics still exist. To successfully meet both biological and cultural challenges, global citizens must likewise challenge the societal values underlying our conceptions of biological nature and our relationships to the planet, to each other, and to other species. Indeed, bioethics has within its historical development the resources to meet such challenges.

3. The Broad Historical Origins of Bioethics

The problematic narrowness of mainstream bioethics in the U.S. is in part a function of its history. However, tracing the genealogy of bioethics opens the space for conceptual reanalysis. In some ways, the story of bioethics' *bilocated* birth (Reich 1994, p. 319) is no longer as novel as it was leading up to Warren Reich's naming it such in his 1995 article. The issue is regularly and enthusiastically addressed in the bioethics literature (e.g., Cooter 2004; Brody 2009; Whitehouse 2003; ten Have 2012). It was Andre Hellegers, Reich concludes, who "superintended the introduction of the term 'bioethics'..." (Reich 1994, p. 323) in association with what was to become the Kennedy Institute for the Study of Human Reproduction and Bioethics, founded in 1971. Even with its intentional emphasis on the study of human medicine, Hellegers himself desired that the Institute – and bioethics – have a broadening ethical role. Reich notes that Hellegers desired that "bioethicists would emerge who have more expertise in the ethics of the life sciences than the average moral philosopher or moral theologian" (Reich 1994, p. 324). Indeed, from the conception of the term and the field they have had a focus on applying the careful

3 The American Society of Bioethics and Humanities is the largest organization representing bioethics and was formed from three other organizations which themselves represented clinicians, lawyers, and academic scholars involved in bioethics (ASBH 2014). Increasingly clinical and legal aspects of ethics in practice had displaced those in the humanities. Even while philosophical, religious, phenomenological, and literary perspectives are present within ASBH, they are marginal compared to the clinical and medical perspectives. Arthur Caplan, one of the founders of ASBH, noted in his Lifetime Achievement Award remarks at the 2016 meeting that continued work was needed to overcome that displacement. Furthermore, from the beginning ASBH included no environmental or public health ethics of note. The Environmental Ethics Affinity group of ASBH formed in 1999 continues to struggle, from our perspective, to attract participation and scholarship.

philosophical expertise of the moral philosopher and theologians to the technical world of medical research and practice.

The other half of the term's so-called 'bi-located birth' strikes out on its own distinct trajectory, starting from cancer researcher Van Rensselaer Potter's work in 1971 (Potter 1971). As a pioneer in the relatively new fields of biochemistry and oncology inspired by American ecologist Aldo Leopold's land ethic, Potter saw human population growth as analogous to the uncontrolled growth of cancer cells. He advocated a broader view of bioethics through various global organization and mentoring relationships, and achieved more recognition outside the United States than inside (Whitehouse 2003, p. W30). He became increasingly concerned about the relationships between environmental threats and social injustices, and co-created the term "deep bioethics" modeled after Arne Naess' concept of deep ecology (Potter and Whitehouse 1998). Compared to Hellegers' conception of bioethics, Potter's bioethics was a concept with a broader ethical focus, "the name of a discipline combining science and philosophy with wisdom... about human survival and flourishing..." (ten Have 2012, p. 61).

According to ten Have's assessment of Potter's positioning within bioethics, that concept was actively engaged in the broad intersections that specializations (in medicine as well as in applied ethics) tend to silo away. Connection and interrelations in and through the subjects of medicine, environmental science, ecology, and ethics get lost in this siloing, leaving a series of orphaned subdisciplines to address issues with a limited set of conceptual and methodological tools. While Hellegers and Potter shared a common motivation for bioethical inquiry, their approaches led to a practical divergence and, in this divergence, ecology and medicine became disconnected (Whitehouse 1999). As biomedical technologies began to grow rapidly, bioethics found a niche in responding to its ethical issues: a biotechnological focus emerged as bioethics' core (see Jennings 2016). Yet, the broad issues of bioethics demand an integrative – not overly-specialized – approach to health and an intergenerative (George, Whitehouse, and Whitehouse 2011) approach across fields that includes innovation through integration, going between disciplines and professions to go beyond in our thinking, valuing and acting in the world. The Potter-inspired call for an integrative bioethics has been taken up by numerous bioethicists (e.g., Rincic, Sodeke, and Muzur 2016, Sodeke and Wilson 2017, and Macer 2017).

More recently, a third voice has been introduced to this story, compelling a re-telling of the birth of bioethics as *trilocated* across American and European traditions. This third voice is the voice of the German pastor Fritz Jahr now celebrated as the European originator of the term "bioethics" (Sass 2007). Rather than an exclusive or even primary focus on human health, Fritz Jahr, in a 1927 essay, asserts his own

“bio-ethical demand: ‘*Respect every living being on principle as an end in itself and treat it, if possible, as such!*’” (Jahr 2011 [1927], p. 4). Jahr argues that “the fact of a close interrelationship between animal protection and ethics finally is based on the reality that we not only have moral obligations towards fellow humans, but also toward animals, even against plants – in short: toward all forms of life -, so that we can speak about ‘Bio-Ethics’” (Jahr 2011 [1928], p. 8). Jahr’s post-Kantian extension of ethics (Steger 2015) is a view that lost traction in the post-war rise of empirical positivism and human atrocity-driven ethical focus on the nature and value of human life.

The genealogical approach to understanding bioethics as born from the three distinct traditions emphasizes the dynamic processes of formations and contestations of power within historical and cultural contexts from which the meaning emerges. However, such an understanding does not necessarily cede basic conceptual common ground. The complex genealogy of bioethics⁴ gives weight to the idea that returning, critically, to the concepts and methodologies of bioethics, can be good for health - human, nonhuman, and environmental. It is the telling of the story of the relational ecology of bioethics.

4. Reinvigorating bioethics – Public Health in an International Context

Reinvigorating bioethics within this three-part genealogy is to situate the important relation between environmental well-being and human health, or to bring ecological and environmental knowledge into balance with human health; indeed, it is very much in line with the project of public health. Our contemporary understanding of the relationship between human health and environmental well-being is shaped by numerous factors. In terms of global public health this relationship is at once specified regionally, where specific environmental conditions, such as toxic waste dumps, have specific impacts on individual and population health, and also globally, where industrial development has impacts on a global and compounding scale, like the increased levels of carbon dioxide in the atmosphere. Global health consequences of anthropogenic change in climate conditions, from weather pattern disruptions to water shortages or excesses, combine with regional impacts of environmental toxins and overdevelopment of urban areas to bring about complex negative health consequences that are only beginning to be recognized and understood. Whereas mainstream bioethics joins mainstream medicine in extolling the importance of

⁴ We strive to be conscientious here with our use of the term ‘genealogical.’ We intend, by that term and beyond a mere history of ideas, to invoke a methodology or diagnostic by which to critique a tradition or a concept, following Koopman, himself, following Foucault, Nietzsche, and the American pragmatists (see Koopman 2013, p. 6).

DNA and genes for the individual, a different focus of science and value system emerges in the context of developing global ecological knowledge.⁵ Ecological or systems-level impacts on global public health develop regularly and pose bioethical challenges that exist not solely at the level of the individual but, rather, at the level of the environment in which the individual is situated.

In tandem with recognition of the global health impacts of environmental degradation, there is a deeper and broader change in the scientific and social perspective on our human relationships to the rest of the natural world. This conceptual shift is the result of a more critical reflection on the relationships between scientific development and social change, including animal, microbial, and digital. For example, the U.S. environmental revolution of the 1960's and 1970's led to a social policy that shifted toward deepening moral consideration of nonhuman animals and the natural environment. Codified in laws treating a range of topics from treatment of production and companion animals to environmental pollution controls and acceptable use, these societal ethical standards mark significant changes in human relations to and within the natural world. Beyond the individual physical body, an ecological perspective challenges the historical Western dualism between the human and nature, emphasizing instead the myriad ways through which entities in the world are interconnected and interrelated through and through. The autonomous self of mainstream bioethics comes under critique as, instead, an integral and complex community of intergenerative organisms. This conceptual context gave rise to the science and ethics of public health, concerned with the ways individuals were situated in and relate to social and environmental contexts.

Public health ethics arose out of concern about bioethics' inadequate scope in the 1980's (see Lee 2012:86). A wide range of theoretical approaches to public health exist, including seminal work by Nancy Kass (Kass 2001). Among recent efforts, the Canadian Association of Faculties of Medicine, in an effort to distinguish public health ethics from bioethics, delineated the differences in terms of emphasis and value commitments. The differences in emphasis include, "Population focus vs. focus on individual", "Community perspective vs. focus on the person", "Social determinants vs. individual agency and responsibility", "Systems of practice vs. individual decision-making", and "Distribution of resources vs. patient care". Public health is also committed to a "wider range of values", including solidarity, social justice, collective interests, respect for communities, human flourishing, reciprocity,

5 Several other examples might be offered, from the maldistribution of research monies focusing on developing technologies, to the polluted rivers and so-called cancer villages of rural China (Phillips 2013), to the underfunding of public health education, to genomic determinism and neurocultural hype in relationship, to so-called diseases like Alzheimer's, to conflicts of interest between physician scientists and the biotechnology and pharmaceutical industries.

and public trust” (AFMC 2016). The framing work of public health is an explicit attempt to recognize and work with the relationships between human health and environmental well-being that drive those contemporary health-related challenges we pointed toward above.

Despite public health ethics’ role as a critical response to mainstream bioethics, the commitments of public health ethics are indeed quite closely aligned with those of bioethics, although they focus their attention at different levels of political organization – individual vs. paternalism (Callahan and Jennings 2002). So, “work remains to be done to establish a clear definition of the moral endeavor of public health” (Lee 2012: 95). While public health ethics offers an alternative normative orientation to questions of health, it faces conceptual and scoping challenges of its own that makes it, like mainstream bioethics, incapable of addressing contemporary bioethical challenges. If the problem with both mainstream bioethics and public health ethics is one of siloing and scope, then it might well be overcome by transdisciplinary efforts like that of the One Health Initiative. Initially conceptualized by veterinary professionals (AVMA 2016), the One Health proposes that health is best understood and most effectively upheld at the interface of the three core and globalizing components: human health, animal health, and environmental wellbeing. In 2007, the American Medical Association approved a bond with the American Veterinary Medical Association in support of this idea (AVMA 2007). And the One Health Initiative was initialized as a global effort to bring together various siloed approaches to health around a common and global goal (online).⁶

In summary, public health ethics is an excellent bridge between medical/clinical and environmental forms of bioethics. It expands the moral scope beyond the individual in a clinical context to the community, and focuses less on autonomy and more on justice and solidarity. Understanding health at the intersections of individual and community requires an ecosystemic perspective where health care is seen in the context of social care and other economic and ecological priorities. Other life forms besides humans are part of this public health picture. Planning over a longer time span of the activity, such as international and local prevention programs, is essential to seeing health not only in a broader global geographic but extended temporal perspective. There seems little doubt that a transdisciplinary ethical and scientific

⁶ One obvious manifestation of this growing attention to global bioethics is the reinvigoration of the journal *Global Bioethics*. Although first published in 1988, the same year as Potter’s book entitled *Global Bioethics*, it is now under recent new editorial guidance. This journal focuses on practical and conceptual aspects of a bioethics dedicated to addressing real world international health problems. It is also responsive to the emergence of Global Health as an increasingly visible academic field, which may itself be criticized for being overly medicalized and ethically narrow (see Packard 2016).

focus at this population level is essential to addressing the global health challenges that are emerging in this epoch of the Anthropocene.

5. Reinvigorating bioethics – Directions

From microbial diversity to animal communities to environmental wellbeing and human health, the vast network of human relations is the key challenge to the role and scope of bioethical inquiry. As a part of this complex landscape of relations, the role of an *ecosystemic bioethics* becomes a bridge to the future, guiding the interconnections within the ecosystem of bioethics. Bioethics can evolve to play an important role in the complex contemporary landscape of the life sciences by developing a richer ecological perspective. As Beever and Morar write, bioethics must be thought of as intimately connected to the work of the life sciences, despite of and in support of the complexity there.

“Bioethics relies on a deep partnership with the understanding of the natural world as described by our best scientific knowledge, including only medicine but also biology, ecology, and the full range of life sciences. Workings at the intersections of disciplinary fields and knowledge domains, bioethicists bridge the gap between the sciences and the humanities – two cultures that together can help us apprehend pressing global problems (Beever and Morar 2013, p.1).

The ecosystem of bioethics, as we see it, positions bioethics in close relationship to public health ethics and away from a narrow scope focused on the individual in biomedicine. Further, it extends the timeline of evaluation from immediacy toward relationality – interpersonal and ecological – over longer periods of time. The genealogy of bioethics supports the argument that public health ethics should not be seen as an effort to overcome bioethics but, instead, to rethink it through the idea of interrelations. The value context of public health ethics helps us see what this reinvigoration of bioethics might entail. For example, an ecosystemic bioethics values interdependence in dialogue with independent autonomy, respecting the complexity of community and individual health concerns. A reinvigorated conception of beneficence renews and expands the caring professionalism of doctors and other health providers, from patients to collective interests and issues of social justice. Nonmaleficence interpreted more broadly draws policy and practice considerations in medicine back under the precautionary principle, understood to guard against not only direct impacts to human health but more broadly against an expansion of the ecological footprint of health care systems for the sake of human flourishing. Finally, adequate specification of justice compels not only continued examination of

fair practice and distribution of goods and harms, but also a broader look at income inequity and the particular vulnerabilities of the poor to environmental threats to health. Such a reinvigoration, informed by contemporary scientific and normative knowledge of the ecosystem of bioethics, is increasingly complex as it takes account of a wide range of possible specifications.

But ecological relations between human and environmental wellbeing are becoming more and more well-documented both in the institutionalization of environmental health curricula and also in the contemporary bioethics literature. Howard Brody, for instance, brings this relation to bear in his *The Future of Bioethics*, challenging disconnect between human health and environmental wellbeing. “We are being called upon,” Brody writes, “to expand the network of affiliations and the network of wellbeing that is necessary for optimal human flourishing” (2009, p. 177). Brody goes on to list the three levels at which bioethics might engage these broader environmental concerns. First, we might “consider the human health consequences of ecological change” (2009, p. 181). Indeed, schools and programs in environmental and public health have, still quite recently, developed curricula and programming to address this concern in response to the expanding literature around environmental health and value instigated, in large part, by the early work of figures, such as Rachel Carson whose *Silent Spring* thrust the impacts of environmental degradation into the public sphere by a variety of social, political, and historical drivers. Second, Brody suggests that we “explore the environmental record of health-related facilities” (*ibid*). This suggestion is in line with the green political and corporate movements, which themselves indicate a widely embedded societal ethic in support of a general environmentalism. Thirdly and more expansively, Brody supports the view that reconciling human and environmental health demands that we first recognize “that human beings will not remain ideally healthy and flourishing in a degraded environment. Environmentalism is therefore an extension of health care and a serious concern for bioethicists” (2009, p. 181). Brody exemplifies the developing recognition within bioethics itself that environmental changes are creating unprecedented health challenges where decisions need to be made based on a broader and more inclusive foundation of values. Thus, if we take mainstream bioethics to be informed by those broader uses of the term from American and European historical sources analyzed above, then reconceiving bioethics as an ecological ethics of life can answer its contemporary challenges and align it with the orientation of public health.

However, the other way to read Brody’s position in bioethics is that it conflates the broader normative focus of public health ethics with the frameworks of contemporary bioethics, proposing something very much like the public health bioethics we identify above. This same sort of idea is reflected in Bruce Jenning’s proposal of a “republic of health,” in which relationships and mutuality govern the norms and issues related

to health and life (Jennings 2015b). Specifically, the One Health initiatives face the important challenge of normative and epistemic conflicts between not just two but numerous disciplinary and ethical perspectives. To date, the One Health researchers and practitioners have failed to sufficiently recognize their perspective's potentially formative role in reinvigorating bioethics; thus, a return to the international genealogical roots of bioethics offer rich opportunity to reinvigorate the field of bioethics and work through the practical implications of its emerging proximity to public health ethics.

So what is new about our efforts to bridge clinical and environmental ethics through public health? First, we endorse a genealogical approach that appreciates the deeply connected messages of Van Potter and Fritz Jahr, separated by time, space, and culture, and now increasingly being examined for their similarities by different scholars. We argue that bridges to the future like these are built on historical understanding of conceptual roots. And we criticize the medical commodification that has so well-funded areas of ethical scholarship in biomedicine around problems like genetics and neuroscience. We think that the attention from bioethicists is too often too gentle in its critique: ethicists fear biting the hand that feeds them and obstructing the march-to-progress narrative. They fail to adequately address the social determinants of poor health that are in turn the result of income inequity and environmental degradation through overconsumption of natural resources. To the extent that we have unsustainable materialistic cultures in the world, we also have health care systems that focus excessively on expensive technology and unfortunately demonstrate generally poor outcomes. Thus, we have argued that a reinvigoration of mainstream bioethics involves the recognition of the ecological relationality of health. This recognition has the potential to develop in exchange with the theorizing of public health ethics and through the practical work of initiatives, such as the One Health. Such reinvigoration is directly relevant to the intersections of ecology, value, and health that drive contemporary global health issues. Yet, in response to our argument, one might wonder if this deep and broadened reconceptualization is even possible, given the embeddedness of bioethics' mainstream forms across the globe. Yet, as a diversity of voices continues to enrich bioethical discussions, health care methods and systems can evolve towards a more sustainable future built around new attention to prevention, chronic disease, and community care driven by the impact of public health. From this, new organizational forms of normative engagement will emerge (see Whitehouse 2014; Pierce and Jameton 2004). Improving bioethics research and education in conversation with public health ethics is the key to addressing not only economic inequities, social injustices, and individual health concerns but also nonanthropocentric environmental welfare issues – both within our own generation and between ours and future generations. Reconciling public

health ethics with bioethics posits a more inter generative and ecosystem perspective that ensures both human flourishing and vibrant ecosystems.

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Ekosustav bioetike: građenje mostova prema javnom zdravlju

SAŽETAK

Razumijevanje bioetičkog pitanja kao ekosustava svrstava promišljanje o zdravlju konceptualno blizu etici javnog zdravlja. Unatoč tome što ima korijene u dugotrajnim, kulturološki raznolikim i disciplinarno širokim temama o odnosima čovjeka prema okolišu, kao što se očituje u radu Fritza Jahra i Van Rensselaer Pottera, medicinska "mainstream" bioetika zadržala je relativno uzak fokus na individualno zdravlje. Praktični primjeri bioetike nedosljedni su, kako s pojmom vlastitih povijesnih međunarodnih konteksta, tako i s ekosustavnom prirodom zdravlja, konceptom sustava koji uključuje i kulturne i biološke interakcije. Slijedom sve veće međunarodne potrebe za promjenom u bioetici, rad prosuđuje da ponovno osnaživanje bioetike zahtijeva transdisciplinarno sjedinjenje ekologije, vrijednosti i zdravlja - kao mosta koji povezuje s identificiranim projektima etike javnog zdravlja.

Ključne riječi: etika javnog zdravlja, bioetika, ekosustav, međusobna ovisnost, genealogija, okoliš, transdisciplinarnost, Jahr, Potter.