Part One

A Typology of Posthumanism:

A Framework for Differentiating Analytic, Synthetic, Theoretical, and Practical Posthumanisms

Abstract. The term 'posthumanism' has been employed to describe a diverse array of phenomena ranging from academic disciplines and artistic movements to political advocacy campaigns and the development of commercial technologies. Such phenomena differ widely in their subject matter, purpose, and methodology, raising the question of whether it is possible to fashion a coherent definition of posthumanism that encompasses all phenomena thus labelled. In this text, we seek to bring greater clarity to this discussion by formulating a novel conceptual framework for classifying existing and potential forms of posthumanism. The framework asserts that a given form of posthumanism can be classified: 1) either as an *analytic posthumanism* that understands 'posthumanity' as a sociotechnological reality that already exists in the contemporary world or as a *synthetic posthumanism* that understands 'posthumanity' as a collection of hypothetical future entities whose development can be intentionally realized or prevented; and 2) either as a *theoretical posthumanism* that primarily seeks to develop new knowledge or as a *practical posthumanism* that seeks to bring about some social, political, economic, or technological change. By arranging these two characteristics as orthogonal axes, we obtain a matrix that categorizes a form of posthumanism into one of four quadrants or as a hybrid posthumanism spanning all quadrants. It is suggested that the five resulting types can be understood roughly as posthumanisms of *critique*, *imagination*, *conversion*, *control*, and *production*.

We then employ this framework to classify a wide variety of posthumanisms, such as critical, cultural, philosophical, sociopolitical, and popular (or 'commercial') posthumanism; science fiction; techno-idealism; metahumanism; neohumanism; antihumanism; prehumanism; feminist new materialism; the posthumanities; biopolitical posthumanism, including bioconservatism and transhumanism (with specialized objective and instrumental typologies of-

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fered for classifying forms of transhumanism); and organizational posthumanism. Of particular interest for our research is the classification of organizational posthumanism as a hybrid posthumanism combining analytic, synthetic, theoretical, and practical aspects. We argue that the framework proposed in this text generates a typology that is flexible enough to encompass the full range of posthumanisms while being discriminating enough to order posthumanisms into types that reveal new insights about their nature and dynamics.

I. Introduction

Terms such as 'posthumanism,' 'posthumanity,' and 'the posthuman' are being used to describe an increasingly wide and bewildering array of phenomena in both specialized scholarly and broader popular contexts. Spheres of human activity that have been described as 'posthumanist' include academic disciplines,[1] artistic movements,[2] spiritual movements,[3] commercial research and development programs designed to engineer particular new technologies,[4] works of science fiction,[5] and campaigns advocating specific legislative or regulatory action.[6]

Running through many of these 'posthumanisms' is the common thread of emerging technologies relating to neurocybernetic augmentation, genetic engineering, virtual reality, nanotechnology, artificial life, artificial intelligence, and social robotics which – it is supposed – are challenging, destabilizing, or transforming our understanding of what it means to be 'human.'

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[1] For examples, see the descriptions of critical, cultural, and philosophical posthumanism and the posthumanities later in this text.

[2] Examples include the works of performance art created by Del Val. See Del Val et al., "Interview on the Metahumanist Manifesto with Jaime del Val and Stefan Lorenz Sorgner" (2011).

[3] An instance is the form of neohumanism developed by Sarkar. See Sarkar, "Neohumanism Is the Ultimate Shelter (Discourse 11)" (1982).

[4] For examples of the term 'posthuman' being used to describe specific technologies that are being developed by DARPA and other military research and development agencies, see, e.g., Coker, "Biotechnology and War: The New Challenge" (2004); Graham, "Imagining Urban Warfare: Urbanization and U.S. Military Technoscience" (2008), p. 36; and Krishnan, "Enhanced Warfighters as Private Military Contractors" (2015).

[5] Posthumanist aspects of science fiction are discussed, for example, in Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (1999); *Cyberculture, Cyborgs and Science Fiction: Consciousness and the Posthuman*, edited by Haney (2006); and Goicoechea, "The Posthuman Ethos in Cyberpunk Science Fiction" (2008).

[6] Examples include some of the legislative and regulatory approaches proposed in Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (2002), and Gray, *Cyborg Citizen: Politics in the Posthuman Age* (2002).

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And yet when posthumanist interpretations are also being offered for subjects like the Bible,[7] medieval alchemical texts,[8] Shakespeare,[9] and 1930s zombie fiction,[10] it becomes apparent that directly equating posthumanism with an attitude toward futuristic technologies is overly simplistic and even misleading.

And not only do different manifestations of posthumanism differ widely from one another in their subject matter; even when two forms of posthumanism consider the same object, they often oppose one another in their aims, methodologies, and conclusions. For example, both transhumanists and bioconservatives attempt to foresee the extent to which genetic engineering will allow the capacities of future human beings to be radically transformed; while transhumanists conclude that the development of such technologies must be pursued as a natural next step in the evolution of humanity, bioconservatives conclude that pursuit of such technologies must be blocked in order to preserve the integrity of the human species and the possibility of a politically and economically just society.[11]

This *mélange* of meanings for the term 'posthumanism' raises important questions. First, is it possible to develop a definition of posthumanism that covers all of its uses? And second, assuming that this is theoretically possible, would it be desirable? Or is it better to acknowledge that 'posthumanism' has become too fragmented to possess a single coherent definition and that it is better to develop separate definitions for the diverse phenomena which share that appellation?

In this text, we seek to contribute to this debate by developing a conceptual framework that presents one approach to clarifying the key characteristics of different types of posthumanism and the relationships between them. Although the structure and details of the proposed framework are novel, such a framework can be understood as an appraisal, synthesis, and elaboration of the work of thinkers such as Ferrando, Herbrechter, Birnbacher, Miah, Miller, and others who have not simply carried out posthumanist reflection

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[7] See, e.g., *The Bible and Posthumanism*, edited by Koosed (2014).

[8] See, e.g., Smith, *Genetic Gold: The Post-human Homunculus in Alchemical and Visual Texts* (2009).

[9] Examples include the texts collected in *Posthumanist Shakespeares*, edited by Herbrechter & Callus (2012).

[10] Instances of this can be found in *Better Off Dead: The Evolution of the Zombie as Post-Human*, edited by Christie & Lauro (2011).

[11] These issues are explored in more detail in the discussion of biopolitical posthumanism and bioconservatism later in this text.

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on topics like genetic engineering or science fiction but have instead analyzed the nature of posthumanism itself – have attempted to forge some conceptual order amidst the landscape of many conflicting 'posthumanisms.'

Rather than presenting a simple catalogue of posthumanisms, the framework developed in this text proposes that a given form of posthumanism can be categorized on the basis of a pair of factors: its understanding of 'posthumanity' and the role or purpose for which the posthumanism has been developed. In this way, a posthumanism can be classified either as an *analytic posthumanism* that understands posthumanity as a sociotechnological reality that already exists in the contemporary world or as a *synthetic posthumanism* that understands posthumanity as a collection of hypothetical future entities whose development can be intentionally realized or prevented. Simultaneously, it can be classified either as a *theoretical posthumanism* that primarily seeks to develop new knowledge or as a *practical posthumanism* that primarily seeks to bring about some social, political, economic, or technological change. By combining these factors, a two-dimensional typology is created that identifies a form of posthumanism with one of four quadrants or as a hybrid posthumanism that spans all quadrants. After presenting this tool, the majority of this text will be spent in employing it to classify a wide variety of posthumanisms that have been identified in the literature.

II. Established Definitions of Posthumanism

Before formulating our typology of posthumanism, it is useful to explore the ways in which the concept of posthumanism is currently understood.

A multiplicity of posthumanisms. The term 'posthuman' has been used by different authors to represent very different concepts;[12] while this has enriched the development of posthumanism, it has also introduced confusion.[13] For example, Miller notes that the term has been given a variety of meanings by theorists operating in the natural sciences; cybernetics; epistemology; ontology; feminist studies; film, literary, and cultural studies; animal studies; and ecocriticism.[14] Herbrechter observes that the 'post-' in 'posthumanism' is not

[12] Bostrom, "Why I Want to Be a Posthuman When I Grow Up" (2008), p. 107.

[13] See Ferrando, "Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations" (2013), p. 26.

[14] Miller, "Conclusion: Beyond the Human: Ontogenesis, Technology, and the Posthuman in Kubrick and Clarke's 2001" (2012), p. 163.

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only ambiguous but even "radically open" in its meaning.[15] For example, the word can be understood either as 'post-*humanism*,' a critical response to and deconstructive working-through of the assumptions of humanism, or as '*posthuman*-ism,' a philosophy of future engineered beings whose capacities are expected to surpass those of contemporary human beings.[16] Indeed, Birnbacher suggests that the term 'posthumanity' and related idea of 'transhumanism' have been utilized by so many different thinkers in such widely divergent fashions that they can be better understood "as slogans rather than as well-defined concepts."[17]

Posthumanist terminology. In this text, we will refer often to the interrelated but distinct notions of 'posthumanization,' 'posthumanity,' 'posthumanism,' and the 'posthuman.' Because each of these terms has been used to represent multiple concepts, it is difficult to offer authoritative definitions for them. Nevertheless, they can be broadly differentiated:

- **Posthumanization** can be understood as a process by which society comes to include at least some intelligent personal subjects that are *not* natural biological human beings and which leads to a nonanthropocentric understanding of reality. At present, posthumanization often occurs as a result of the **technologization** of human beings, which is spurred by phenomena such as our increasing physical integration with electronic systems, our expanding interaction with and dependence on robots and artificial intelligences, our growing immersion in virtual worlds, and the use of genetic engineering to design human beings as if they were consumer products.[18] However, processes of posthumanization do not inherently require the use of modern technology: works of mythology or literature that present quasi-human figures such as monsters, ghosts, and semidivine heroes can advance the process of posthumanization by challenging the boundaries of our concept of humanity and, in some sense, incorporating those figures into the structures and dynamics of society.[19]

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[15] Herbrechter, *Posthumanism: A Critical Analysis* (2013), p. 69.

[16] Herbrechter (2013), p. 16.

[17] Birnbacher "Posthumanity, Transhumanism and Human Nature" (2008), p. 96.

[18] The relationship of posthumanism to the commercialization of the human entity is discussed in Herbrechter (2013), pp. 42, 150-52.

[19] For the role of such figures in nontechnological posthumanization, see, e.g., Herbrechter (2013), pp. 2-3, 106.

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- **Posthumanity** refers either to a collection of intelligent beings – whether human, synthetic, or hybrid – that have been created or affected by a process of posthumanization or to the broader sociotechnological reality within which such beings exist.
- **Posthumanism** is a coherent conceptual framework that takes the phenomenon of posthumanization or posthumanity as its object; it may be developed as part of an academic discipline, artistic or spiritual movement, commercial venture, work of fiction, or form of advocacy, among other possible manifestations.
- **'Posthuman'** can refer to any of the above: a process (posthumanization), collection of entities (posthumanity), or body of thought (posthumanism).

Tracing the origins of posthumanism. Some identify the birth of posthumanism as an explicit conceptual system with Wiener's formulation of cybernetics in the 1940s; others suggest that posthumanism as an explicit discipline only appeared with Haraway's analysis of cyborgs and the dissolution of human-machine boundaries in the 1990s.[20] While ongoing developments in robotics, artificial intelligence, biocybernetics, and genetic engineering are lending new urgency to questions surrounding posthumanism, Herbrechter argues that the phenomenon of posthumanism is at least as old as that of post-Enlightenment humanism – even if it has only recently been explicitly named.[21] The fact that the term 'posthumanism' is used to refer to such a diverse array of intellectual phenomena means that scholars can date its origins variously to the Renaissance, post-Enlightenment era, 1940s, or 1990s, depending on exactly which 'posthumanism' is being considered.

Attempts at defining posthumanism generically. Ideally, it would be possible to formulate a generic definition of 'posthumanism' broad enough to cover all such intellectual frameworks. And, indeed, scholars have attempted to identify elements that are shared across all varieties of posthumanism. For example, Miller contends that various strains of posthumanism agree that:

> The posthuman subject is a multiple subject, not a unified one, and she or he (a distinction that also gets blurred in posthuman-ism) is not separate from

[20] Such perspectives on the genesis of posthumanism are offered, e.g., in Herbrechter (2013), p. 41, and its discussion of Gane, "Posthuman" (2006).

[21] Herbrechter (2013), p. 77.

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> his/her environment. Technologies become extensions of the self, and humans become only one type of individual in a vast ecosystem that includes digital as well as natural environmental forces. In other words, posthumanism is partly about leaving behind the old notions of liberal humanism. [...] But it also begins to gesture toward a much more radical state, a state beyond the current human form.[22]

According to this view, the heart of posthumanism is a 'post-anthropocentric'[23] perspective that looks beyond traditional human beings to identify other sources of intelligence, agency, subjectivity, and meaning within the world. Emphasizing this fact, Ferrando states that:

> Posthumanism is often defined as a post-humanism and a post-anthropocentrism: it is "post" to the concept of the human and to the historical occurrence of humanism, both based [...] on hierarchical social constructs and human-centric assumptions.[24]

Thus by way of offering a preliminary definition, Herbrechter suggests that posthumanism in its most general sense is "the cultural malaise or euphoria that is caused by the feeling that arises once you start taking the idea of 'post-anthropocentrism' seriously."[25] Similarly, Birnbacher suggests that the different forms of posthumanism are united in studying already existing or potential future 'posthumans' whose nature is not constrained by human nature as previously understood and who lack at least some key characteristics that have historically been considered typical of the human species.[26]

Miah, meanwhile, finds "a range of posthumanisms" that are united by the fact that they "challenge the idea that humanness is a fixed concept."[27] However, posthumanism's challenge to the concept of the 'human' differs from the more nihilistic attacks waged by postmodernism: in their own unique ways – whether subtly or wholeheartedly – various kinds of posthumanism are willing to entertain the idea of restoring in an altered post-anthropocentric form some of the 'grand narratives' about humanity, agency, history, and other phenomena that had been wholly rejected by postmodernism.[28]

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[22] Miller (2012), p. 164.

[23] See Herbrechter (2013), pp. 2-3.

[24] Ferrando (2013), p. 29.

[25] Herbrechter (2013), p. 3.

[26] Birnbacher (2008), p. 104.

[27] Miah, "A Critical History of Posthumanism" (2008), p. 83.

[28] Differences between postmodernism and posthumanism can be observed, e.g., in Herbrechter

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Problems with a generic definition of posthumanism. While such general definitions offer a useful starting point, they are hampered by the fact that 'posthumanisms' differ markedly with regard to their origins, purpose, and methodology. For example, as we have noted, some thinkers argue that technological progress is an essential aspect of posthumanism that will inevitably someday be harnessed to engineer a superior posthumanity.[29] Other thinkers argue that technology is not an inherent element of posthumanism at all and that posthumanity is a conceptual array of interrelated human, quasi-human, and nonhuman beings (such as ghosts, monsters, aliens, and robots) that have held a place within the human imagination for hundreds or thousands of years. Any definition of 'posthumanism' that is broad enough to describe all such conflicting perspectives may be so vague as to be of little practical value.

Existing frameworks for categorizing posthumanisms. Scholars have proposed a range of conceptual frameworks for classifying the many forms of posthumanism. For example, Miah distinguishes between the three different phenomena of *biopolitical*, *cultural*, and *philosophical* posthumanism.[30] Ferrando distinguishes three forms of posthumanism *per se* (i.e., *critical*, *cultural*, and *philosophical* posthumanism), while noting that the word 'posthuman' is also used more broadly to include related phenomena such as transhumanism, new materialism, antihumanism, metahumanism, and the posthumanities.[31]

Finally, drawing on Rosenau, Herbrechter distinguishes two different strains of posthumanism. On one side is an *affirmative* posthumanism that includes 'technoeuphorians' (such as transhumanists) who wholeheartedly embrace posthumanizing technologies and 'technocultural pragmatists' who accept that posthumanizing technological change is inevitable and who attempt to strengthen its positive impacts while ameliorating any detrimental side-effects. On the other side is a *skeptical* posthumanism that includes 'catastrophists' (such as bioconservatives) who are attempting to forestall the development of posthumanizing technology due to its perceived danger and 'critical deconstructive posthumanists' (such as Herbrechter) who accept that posthumanizing technological change is occurring and who are primarily interested not in identifying its potentially negative biological or social impacts

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(2013), p. 23.

[29] For such broadly transhumanist perspectives, see, e.g., Bostrom (2008) and Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (2005).

[30] See Miah (2008).

[31] Ferrando (2013), p. 26.

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but in analyzing the theoretical weaknesses, biases, and naïvety displayed by those who zealously advocate such technologization of humankind.[32]

III. A Proposed Two-dimensional Typology of Posthumanism

While such existing schemas for classifying posthumanisms offer valuable insights, we contend that it would be useful to possess a more comprehensive and systematic framework developed for this purpose. To that end, we would suggest that a given form of posthumanism can be classified in two ways:

1) **By its understanding of posthumanity**. A form of posthumanism can be categorized either as an **analytic posthumanism** that understands posthumanity as a sociotechnological reality that already exists in the contemporary world and which needs to be analyzed or as a **synthetic posthumanism** that understands posthumanity as a collection of hypothetical future entities whose development can be either intentionally realized or intentionally prevented, depending on whether or not human society chooses to research and deploy certain transformative technologies.

2) **By the purpose or role for which it was developed**. A form of posthumanism can be categorized either as a **theoretical posthumanism** that primarily seeks to develop new knowledge and understanding or as a **practical posthumanism** that primarily seeks to bring about some social, political, economic, or technological change in the real world.

By arranging these two characteristics as orthogonal axes, a matrix is obtained that categorizes a form of posthumanism into one of four quadrants or as a hybrid that spans all quadrants. Figure 1 depicts this matrix along with our proposed classification of numerous forms of posthumanism that will be investigated within this text. We can now discuss these two axes in more detail.

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[32] For this dichotomy of affirmative and skeptical perspectives, see Herbrechter (2013), pp. 23-24, and its analysis of Rosenau, *Post-Modernism and the Social Sciences: Insights, Inroads, and Intrusions* (1992).

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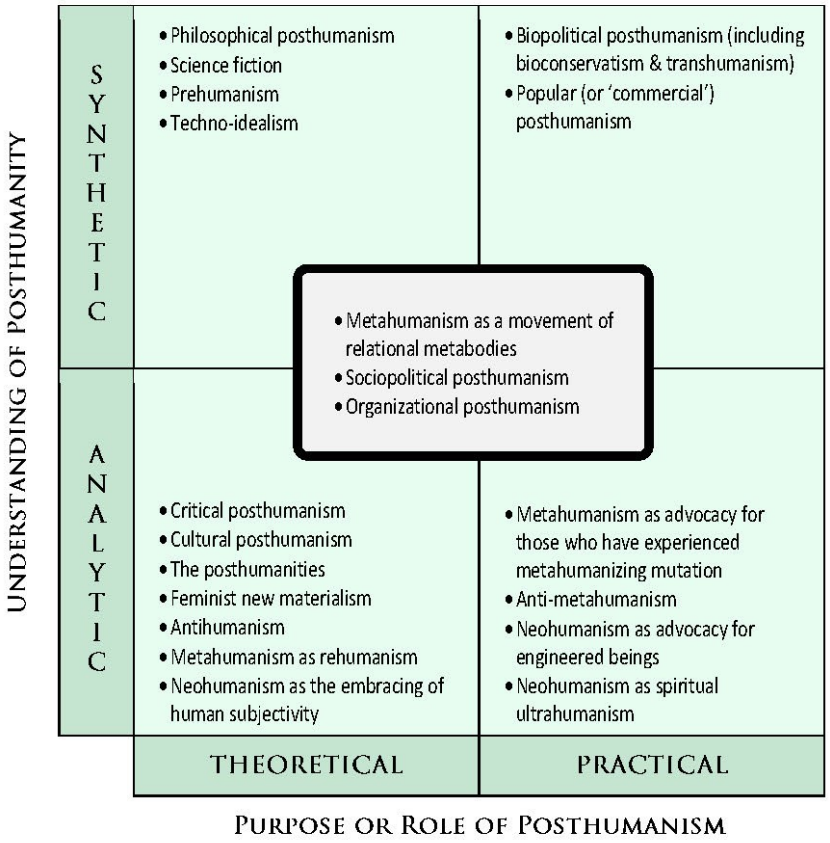

Fig. 1: Our proposed two-dimensional typology of posthumanism, which classifies a form of posthumanism based on whether it understands posthumanity as a sociotechnological reality already existing in the contemporary world ('analytic') or as a set of hypothetical future entities whose capacities differ from those of natural biological human beings ('synthetic') and whether its purpose is primarily to expand the knowledge possessed by humanity ('theoretical') or to produce some specific political, economic, social, cultural, or technological change within the world ('practical'). Classifications are suggested for numerous forms of posthumanism.

Analytic versus synthetic posthumanism. Analytic posthumanisms define 'posthumanity' as a sort of sociotechnological reality that already exists in the contemporary world and which calls out to be better understood. Such posthumanisms typically display a strong orientation toward the present and the past; they do not generally focus on the future, insofar as the exact form that

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the future will take has not yet become clear to us and thus cannot yet be the object of rigorous analysis.

Synthetic posthumanisms, on the other hand, define 'posthumanity' as a set of hypothetical future entities[33] (such as full-body cyborgs or artificial general intelligences) whose capacities differ from – and typically surpass – those of natural biological human beings and whose creation can either be intentionally brought about or intentionally blocked, depending on whether humanity decides to develop and implement certain transformative technologies such as those relating to genetic engineering, neuroprosthetics, artificial intelligence, or virtual reality. Such posthumanisms generally have a strong future orientation; they rarely give detailed attention to events of the distant past, and they conduct an exploration of power structures or trends of the current day only insofar as these offer some insight into how future processes of posthumanization might be directed.

Theoretical versus practical posthumanism. Posthumanisms can also be classified according to the purpose for which they were developed or the role that they play.[34] Theoretical posthumanisms are those that mainly seek to enhance our understanding of issues and to expand the knowledge possessed by humanity – not primarily for the sake of effecting some specific change within the world but for the sake of obtaining a deeper, richer, more accurate, and more sophisticated understanding of human beings and the world in which we exist.

Practical posthumanisms, on the other hand, are interested primarily in producing some specific political, economic, cultural, social, or technological change. While theoretical posthumanism often takes the form of analyses, critiques, or thought experiments, practical posthumanism may take the form of efforts to ensure or block the approval of proposed treaties, legislation, or regulations; secure or cancel funding for particular military, educa-

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[33] An exception to this definition would be prehumanism, a form of synthetic theoretical posthumanism that is similar to science fiction but which imagines the characteristics of quasi-human beings in a hypothetical distant past rather than in the far future. While the directionality of the temporal reference-points is reversed in comparison to that of futurological science fiction, the (implicit or explicit) contrast of contemporary humanity with the intelligent beings of a chronologically distant but causally connected world remains intact. See the discussion of prehumanism later in this text.

[34] The distinction between theoretical and practical posthumanisms could be understood, for example, in light of the Aristotelian division of human activities into *theoria*, *poiesis*, and *praxis*. Theoretical posthumanism is a kind of *theoria*, while practical posthumanism comprises *praxis* (as in the case of posthumanist political movements) and *poiesis* (as in the case of some posthumanist artistic movements).

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tional, or social programs; develop and test new technologies; design, produce, and market new kinds of goods or services; or influence the public to vote, spend their time and money, interact socially, tolerate particular corporate or governmental actions, or otherwise behave in specific ways. Practical posthumanisms may thus include elements of advocacy, engineering, and entrepreneurship.

Hybrid posthumanisms that combine all four aspects. There are at least three kinds of posthumanism which, we would argue, are simultaneously analytic, synthetic, theoretical, and practical. These will be explored in more depth later in this text. The first of these hybrid posthumanisms is the form of metahumanism formulated by Sorgner and Del Val.[35] Their metahumanist program possesses a strong theoretical component, insofar as it is grounded in and seeks to advance critiques developed by thinkers such as Nietzsche and Deleuze; however, it also displays a strong practical component in that it is geared toward generating works of performance art and other concrete products. Similarly, their metahumanism is analytic insofar as it reflects on the 'metabodies' of human beings as they exist today and synthetic insofar as it recognizes that new kinds of metabodies will be created in the future, largely through the ongoing technologization of humankind.

The second hybrid posthumanism is sociopolitical posthumanism. This is manifested, for example, in legal scholars' efforts to update legal systems to reflect emerging deanthropocentrized realities such as the growing ability of robots to autonomously make complex ethical and practical decisions that impact the lives of human beings.[36] Such work is theoretical insofar as it flows from a sophisticated theory of law and practical insofar as it is geared toward reshaping real-world legal systems. Similarly, it is analytic insofar as it investigates the effects of posthumanization that are already reflected in the world today and synthetic insofar as it seeks to anticipate and account for different posthumanities that might appear in the future.

Finally, the form of organizational posthumanism formulated later in this text also combines both analytic and synthetic as well as theoretical and practical aspects. Organizational posthumanism is theoretical insofar as it seeks to understand the ways in which the nature of organizations is being trans-

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[35] They describe their form of metahumanism in Del Val & Sorgner, "A *Metahumanist* Manifesto" (2011).

[36] A thoughtful example of this is found in Calverley, "Imagining a non-biological machine as a legal person" (2008).

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formed by the technologization and posthumanization of our world and practical insofar as it seeks to aid management practitioners in creating and maintaining viable organizations within that posthumanized context. It is analytic insofar as it recognizes post-anthropocentric phenomena (such as the growing use of AI, social robotics, and virtualized interaction) that are already present within many organizations and synthetic insofar as it believes that such post-anthropocentrizing trends will continue to accelerate and will generate organizational impacts that can be shaped through the planning and execution of particular strategies.

Distilling Five Main Types of Posthumanism: Posthumanisms of Critique, Imagination, Conversion, Control, and Production

The types of posthumanism delineated by our two-dimensional framework are generalizations. The phenomena that can be assigned to any one type may differ significantly from one another, thus it is hazardous to assign a broad-brush description to a type of posthumanism and expect it to apply equally well to all of the posthumanisms included within that type. Nevertheless, as a starting point for further discussion, we would suggest that it is possible to capture the fundamental dynamic of each type of posthumanism.

For example, analytic theoretical posthumanisms might collectively be understood as manifesting a '**posthumanism of critique**' that employs posthumanist methodologies to identify hidden anthropocentric biases and posthumanist aspirations contained within different fields of human activity. Similarly, synthetic theoretical posthumanisms could be seen as exemplifying a '**posthumanism of imagination**' that creatively envisions hypothetical future posthumanities so that their implications can be explored. Analytic practical posthumanisms manifest a '**posthumanism of conversion**' aimed at changing hearts and minds and influencing the way in which human beings view the world around themselves. Synthetic practical posthumanisms exemplify a '**posthumanism of control**' that seeks either to develop new technologies that give individuals control over their own posthumanization or to implement legal or economic controls to govern the development of such technologies. Finally, hybrid posthumanisms that span all four spheres can be understood as examples of a '**posthumanism of production**' that develops a robust and rigorous theoretical framework that is then employed to successfully generate concrete products or services within the contemporary world. An overview of these five main types of posthumanism is reflected in Figure 2.

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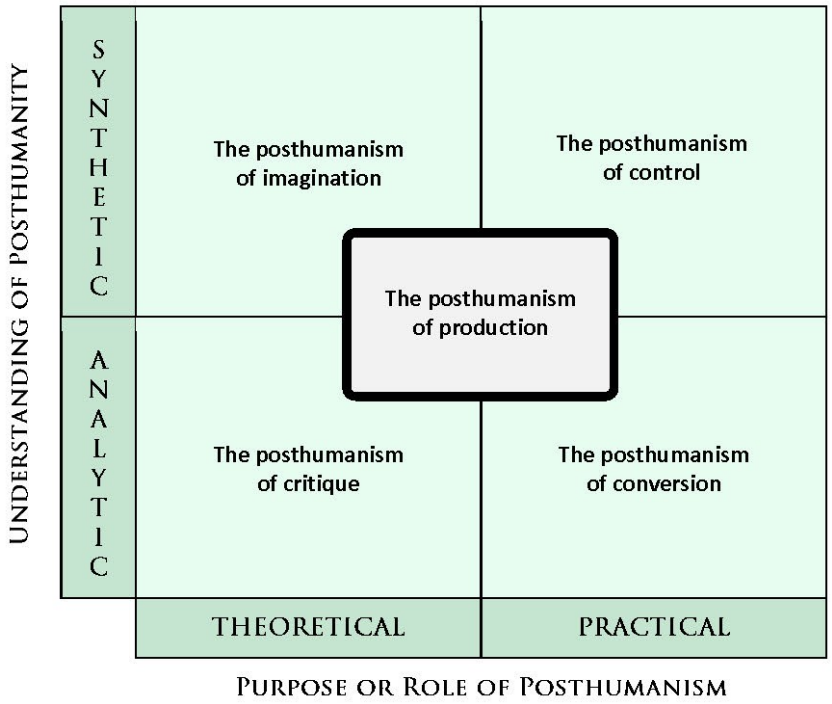

Fig. 2: The five types of posthumanism delineated by our two-dimensional model can be understood informally as posthumanisms of critique, imagination, conversion, control, and production.

IV. Classification and Analysis of Individual Forms of Posthumanism

A review of the literature reveals many different phenomena that have been identified as forms of posthumanism or which more generally have been described as 'posthuman' or 'posthumanist' in nature. Below we classify and analyze many such phenomena utilizing our two-dimensional typology.

A. Analytic Theoretical Posthumanisms: Seeking to Understand the Posthumanized Present

Analytic theoretical posthumanisms can collectively be understood as constituting a 'posthumanism of critique' that employs posthumanist methodologies to uncover hidden anthropocentric biases and posthumanist aspirations that are concealed within different fields of human activity. Such forms

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of analytic theoretical posthumanism include critical posthumanism, cultural posthumanism, the posthumanities (or 'digital humanities'), feminist new materialism, antihumanism, and some forms of metahumanism and neohumanism. We can consider each of these in more detail.

1. Critical Posthumanism

Critical posthumanism is an academic form of posthumanism developed primarily from within the disciplines of the humanities. It constitutes a form of **analytic theoretical posthumanism** in that it applies critical methodologies to challenge our contemporary conception of humanity and to spur the development of more appropriate theoretical frameworks. Critical posthumanism does not come 'after' humanism in a chronological sense but instead follows from humanism in a conceptual sense; Herbrechter explains this by stating that critical posthumanism "inhabits humanism deconstructively,"[37] critiquing historical binary conceptual oppositions between subject and object, biological and artificial, human and machine, human and animal, nature and nurture, and male and female.[38] Unlike many strains of postmodernism, such critical posthumanism is not nihilistic;[39] it is not about destroying the human subject but about recognizing a whole wealth of subjects that had never before been fully acknowledged or which – because of an absence of the necessary sociotechnological environment – could not previously exist in the real world.[40]

Assimilation of the nonhuman. Critical posthumanism seeks to create an account of the personal subject that is descriptive rather than normative and which does not consider 'humanity' as historically (and narrowly) defined but instead addresses a broader universe of entities that includes natural human beings as well as related entities like ghosts, angels, monsters, cyborgs, artificial intelligences, and extraterrestrial beings that have traditionally been considered quasi-human, parahuman, or nonhuman.[41] Critical posthumanism possesses an empathy for such excluded beings in part because it claims

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[37] Herbrechter (2013), pp. 6-7.

[38] The raising of such challenges to historical binary and dualistic thought is a hallmark of posthumanism. See, e.g., Herbrechter (2013), pp. 79, 90.

[39] Regarding the positive aspects of critical posthumanism that distinguish it from more negational forms of postmodernism, see Herbrechter (2013), p. 196.

[40] See Herbrechter (2013), p. 198.

[41] Regarding the wide spectrum of entities that are important for critical posthumanism, see, e.g.,

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that we owe our humanity to them: while some humanists contend that the 'human being' is defined first and then all entities that fail to satisfy that definition are excluded as being 'nonhuman,' critical posthumanism argues that in reality it was our inherent understanding of the myriad forms of the 'inhuman' that first allowed us to define the 'human' in opposition to them.[42] In a sense, critical posthumanism is thus nothing new; it is an age-old, nontechnological, deconstructive process that continually challenges our understanding of (and exclusive identification with) the 'human' by bringing into our circle of awareness examples of the inhuman and nonhuman.[43] It has existed for as long as monsters, angels, mythic heroes, and the relationship of such entities to human beings have been pondered within works of art, literature, philosophy, and theology.

Posthumanism with or without technology. In contrast with transhumanism – which is closely identified with particular technologies – critical posthumanism can thus take the form of a 'posthumanism without technology'[44] that focuses on anthropological, linguistic, or aesthetic questions rather than issues of biomedical engineering. However, as a practical matter, critical posthumanism's consideration of the 'nonhuman other' has taken on a new focus and urgency thanks to the accelerating processes of technologization that are now reshaping humankind. Critical posthumanism does not formulate a critique of technology *per se* but of the processes of technologization by which technological mechanisms, systems, and attitudes are consolidating their power over all aspects of human life. Critical posthumanism recognizes the fact that human beings are – and have always been – locked in a symbiotic relationship of coevolution with our technology; it analyzes and critiques this process, without condemning or embracing it *a priori* in the way that biopolitical posthumanism often does.[45]

Diagnosing 'speciesism.' Critical posthumanism considers the cases of nonhuman entities as a means of diagnosing what it sees as previously unnoticed

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Herbrechter (2013), pp. 2-3, 106.

[42] For a discussion of the logical and practical priority of the 'human' or 'nonhuman,' see Herbrechter (2013), p. 55, and its reflections on Curtis, "The Inhuman" (2006), p. 434.

[43] Herbrechter (2013), p. 44.

[44] Regarding nontechnological forms of posthumanization, see Herbrechter (2013), p. 157.

[45] For a discussion of our symbiotic relationship with technology and critical posthumanism's attitude toward it, see Herbrechter (2013), pp. 90, 19.

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forms of 'speciesism' or anthropocentric bias that have long permeated human political, economic, scientific, artistic, and religious activity.[46] For example, traditional cultural studies are highly anthropocentric, insofar as they assume that 'humanity' (or something closely mimicking it) is required in order for culture to exist; thus animals may have societies, but they do not possess culture. Critical posthumanism, on the other hand, does not assume as a starting point that culture logically requires humanity; indeed, it explicitly rejects this notion.[47] Critical posthumanism accepts the fact that human beings are no longer the only intelligent social actors within the world; we are increasingly only one of many kinds of individuals – both real and virtual, biological and electronic – that populate a rich and complex digital-physical environment and shape it through our interactions.[48] Critical posthumanism thus seeks to identify hidden assumptions that only human beings – and not, for example, social robots or genetically enhanced domesticated animals – are capable of filling particular roles within society or that human activity should be carried out with the sole purpose of benefitting human beings.

A critique of cybernetics, virtualization, and transhumanism. While critical posthumanism appreciates the value of robots and AIs in helping us to better understand the nature of human intelligence and agency, it does not share transhumanism's zeal for attempting to literally transform human beings into virtualized or robotic entities. Indeed, a major aim of critical posthumanism is to resist the defining of 'mind' as a disembodied collection of information in the manner promoted by many forms of transhumanism and some of the more techno-idealistic branches of cybernetics.[49] As envisioned by Haraway, for example, critical posthumanism is not simply an approach bent on destroying traditional anthropocentric presumptions; it also displays a positive element that seeks to formulate a new understanding of human beings as 'embodied

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[46] Ferrando (2013), p. 29.

[47] Regarding the conceptual relationship of humanity to culture, see Badmington, "Cultural Studies and the Posthumanities" (2006), p. 270, and its discussion in Herbrechter (2013), p. 174.

[48] Miller (2012), p. 164. For a philosophical analysis of posthumanized digital-physical ecosystems and the interdependencies existing among their human and nonhuman actors that advances and refines conventional Actor-Network Theory (ANT), see Kowalewska, "Symbionts and Parasites – Digital Ecosystems" (2016).

[49] For critical posthumanism as a challenge to techno-idealism and transhumanism, see Herbrechter (2013), p. 94.

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selves.'[50] Similarly, Hayles foresees a danger that the growing cultural fascination with virtual reality might encourage a false belief that information can exist in a disembodied form; her critical posthumanism thus aims to ensure that processes of posthumanization do not result in the dematerialization of human beings but in our rematerialization – in a recognition that we are networked corporalities, material-digital beings, and not pure information as some transhumanists might claim.[51] Critical posthumanism also challenges transhumanism by devoting attention to questions of power and privilege; Ferrando notes that critical posthumanism explicitly analyzes such issues, while transhumanism is singularly 'non-critical' in its lack of interest in the historical development of humanity and its naïve presentation of a generic 'human being' that exists without reference to social or economic class, sex, race, ethnicity and nationality, interpersonal relationships, or religion and spirituality.[52]

Creating a concept of humanity that can endure. It is possible to argue that far from 'destroying' the concept of humanity in a postmodernist sense, critical posthumanism is actually aimed at saving the concept of humanity; critical posthumanism accomplishes this by transforming our notion of 'humanity' into a broader concept of 'posthumanity' that does not require the continued survival of human beings in some mythically pristine, unengineered, untechnologized, and 'natural' biological form but which instead welcomes into the family of (post-)humanity a wider range of biological, artificial, and hybrid subjects. According to this view, even if 'humanity' in the narrow humanist sense were to someday suffer extinction, a more broadly understood 'posthumanity' would be likely to survive. Indeed, some have suggested that by insisting on a definition of humanity that is so rigidly anthropocentric, it is humanism itself that has created the risk of the eventual 'dehumanization' of the universe through the elimination of biological humankind. Critical posthumanism might thus be understood as a sort of conceptual lifeboat that

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[50] Regarding critical posthumanism's efforts to fashion a positive concept of the embodied self, see Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (1991), and Herbrechter (2013), pp. 99-100.

[51] For the critical posthumanist rejection of an understanding of the human entity as pure information, see Hayles (1999) and its discussion in Herbrechter (2013), pp. 185-86.

[52] Ferrando (2013), p. 28.

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opens the door to the long-term persistence of a world of sapient (if not 'naturally human') posthuman persons and subjects.[53]

Humanism, rehumanism, or alterhumanism? Rather than continuing recent postmodernist trends of disparaging humanism, critical posthumanism might be seen as constituting a renaissance of a transformed and deanthropocentrized humanist thought.[54] Indeed, Herbrechter suggests that posthumanism might be understood as a sort of autoimmune response generated by the larger humanistic culture that can serve to liberate contemporary human beings from the more oppressive and problematic aspects of humanism, thereby leading to the first full flowering of true humanism. However, critical posthumanism attempts to counteract the more dehumanizing aspects of posthumanization not through a strategy of nostalgic 'rehumanization' that restores classical humanism to an authoritative role but through a form of 'alterhumanism' that expands itself to encompass entities and perspectives previously dismissed as inhuman.[55]

Critical posthumanism as a bridge between posthumanisms. Herbrechter's efforts to fashion a "critical but open-minded posthumanism"[56] are suggestive of the fact that critical posthumanism is well-positioned to serve as an impartial mediator and translator between conflicting posthumanist positions. For example, Herbrechter draws on Thacker's attempts to describe the growing informatization of human beings and conversion of the human body into 'biomedia' in a way that is critical but value-neutral and does not inherently support transhumanist or bioconservative positions.[57]

Similarly, Herbrechter argues that critical posthumanism represents a sort of reversible methodological process that can translate between the two spheres or levels of the human being as personal subject and human being as viable system. Taking the human subject as its starting point, critical posthumanism can draw on the insights of postmodernism to deconstruct that subject and move to the atomic realm of processes and relations that constitute

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[53] For the notion that humanism may be the true threat to humanity and posthumanism its rescuer, see Herbrechter (2013), pp. 123-24, 187, and its commentary on Hayles (1999), p. 290.

[54] Regarding posthumanism as the refinement and fulfillment of humanism, see Herbrechter (2013), p. 106.

[55] For critical posthumanism's ability as an 'alterhumanism' to critique the detrimental effects of posthumanization without resorting to naïve humanism, see Herbrechter (2013), pp. 76-77, 70.

[56] Herbrechter (2013), p. 171.

[57] For such more or less value-neutral analyses of posthumanization, see Thacker, "What Is Biomedia?" (2003), p. 52, and the discussion of it in Herbrechter (2013), pp. 191-92.

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what is referred to as a 'human being.' Conversely, by drawing on insights from cybernetics and systems theory, critical posthumanism can begin with a collection of discrete processes and relations and correlate them to show how their interactions create a system that constitutes a human (or posthuman) subject. Critical posthumanism might thus serve as a bridge between postmodernism and cybernetics.[58]

Posthuman Realism

One form of critical posthumanism sometimes referred to by its own name is the strain formulated by Hayles known as 'posthuman realism.' As described above, it emphasizes the embodiment of the human being within a finite and nonexchangeable biological substrate, which contrasts with techno-idealist and transhumanist visions of the human mind as a virtualized entity or collection of disembodied data that can be shifted from one body to another (and between biological and electronic substrates) without imperiling its consciousness or personal identity.[59]

2. Cultural Posthumanism

Miah places the origins of cultural posthumanism in *Posthuman Bodies,* edited by Halberstam and Livingstone in 1995. Other formative figures identified by Miah include Haraway, Hayles, Badmington, and Graham.[60] As a form of **analytic theoretical posthumanism**, cultural posthumanism understands 'posthumanity' to be a state that already exists within our contemporary world. It argues that the nature of posthumanity can be diagnosed by applying the tools of cultural studies to analyze elements of contemporary culture, including works of literature, film, television, music, painting, sculpture, architecture, fashion, computer games, tabletop roleplaying games, and religious and political speech.

Affinity with critical posthumanism. Some authors treat cultural posthumanism and critical posthumanism as though they were the same discipline; other scholars classify critical posthumanism as a subset of cultural posthumanism or *vice versa*. Indeed, the overlap between cultural and critical posthumanism is significant, and many thinkers have worked to advance both forms of

[58] Regarding critical posthumanism as a mediator between postmodernist understandings of the subject and cybernetics, see Herbrechter (2013), pp. 198-99.

[59] See Hayles (1999), p. 5, and Herbrechter (2013), p. 43.

[60] Miah (2008), pp. 76, 78.

posthumanism. Like critical posthumanism, cultural posthumanism can take the form of a 'posthumanism without technology': rather than awaiting or building a future of technologized beings, cultural posthumanism focuses on the present in which humanity already "collapses into *sub-*, *inter-*, *trans-*, *pre-*, *anti-*."[61] Cultural posthumanism also shares with critical posthumanism a strong second-order element, in that it seeks to understand the cognitive and social dynamics by which cultural posthumanism is generated. In fact, Miah argues that the most coherent and explicit theories of posthumanism have been developed from within the fields of cultural and literary studies and communications.[62]

Differences from critical posthumanism. Despite the links between cultural and critical posthumanism, differences can be discerned between the two fields. For example, in exploring posthumanism's origins in the 1990s, Ferrando distinguishes the critical posthumanism that emerged within the sphere of literary criticism and which was driven primarily by feminist theorists from the cultural posthumanism that emerged simultaneously within the field of cultural studies.[63] Unlike critical posthumanism (and biopolitical posthumanism), cultural posthumanism does not privilege issues relating to subjectivity, ethics, politics, and power relations but seeks to develop a broader analysis of posthumanization processes that gives equal weight to their aesthetic, artistic, and theological facets. Beyond highlighting deficiencies in existing bodies of thought, cultural posthumanism can also play a proactive role in building the 'posthumanities' that will increasingly become the focus of study at universities.[64]

Cultural visions of a posthumanized future as diagnoses of the posthumanized present. Both critical and cultural posthumanism analyze the state of posthumanity as it exists in the present moment; however, while critical posthumanism typically focuses on the effects of posthumanization that have already impacted human beings, cultural posthumanism also studies cultural depictions of future social and technological change (e.g., as presented in works of science fiction), insofar as they reflect a current desire for or fear of posthumanization. However, depictions of breakdowns in the binary opposition of human

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[61] See *Posthuman Bodies*, edited by Halberstam & Livingstone (1995), p. viii, and the commentary in Miah (2008), p. 76.

[62] Miah (2008), pp. 75-76.

[63] Ferrando (2013), p. 29.

[64] Herbrechter (2013), p. 143.

and inhuman can be found not only in science fiction but in all types of cultural texts, from ancient to contemporary works; thus cultural posthumanism has a vast field of objects for study.[65]

Cultural products as harbingers of posthuman oppression or liberation. As previously noted, critical posthumanism does not take an *a priori* stance in favor of either technoeuphoric transhumanism or technoparanoid bioconservatism; it instead tries to honestly understand and critique both positions.[66] Nevertheless, in practice critical posthumanism injects itself into such biopolitical discourses in a way meant to expose perceived biases and shift the processes of posthumanization in a direction of greater justice and equity. Miah argues that despite its supposed neutrality regarding the value of posthumanization, cultural posthumanism, too, often reflects an implicit concern that revolutionary new technologies will be appropriated by the powerful in a way that thwarts the realization of social justice for the less privileged. Cultural posthumanism documents the ways in which cultural products explore the power of the posthumanization process to either liberate or oppress human beings.[67] Miah suggests that this investigation of the meaning of justice and ethics in a posthumanized world represents a common interest of both cultural and philosophical posthumanism.[68]

3. The Posthumanities (or Digital Humanities)

Ferrando notes that while the word 'posthumanities' can refer to a collection of future posthumanized species, it can also denote a set of academic disciplines that are in the process of succeeding the historical disciplines of the humanities.[69] The nature of such 'posthumanities' is as diverse and ambiguous as that of posthumanism itself. On the one hand, the posthumanities can include disciplines like critical and cultural posthumanism that explicitly incorporate posthuman realities into their subject matter or posthumanist conceptual frameworks and techniques into their methodologies; such posthumanities offer a skeptical assessment of posthumanizing and technologizing trends. On the other hand, the term 'posthumanities' is sometimes

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[65] Regarding the broad range of cultural artifacts that may reflect posthumanist themes, see Herbrechter (2013), p. 143.

[66] See Herbrechter (2013), p. 84.

[67] Regarding this dual potential of the forces of posthumanization, see Herbrechter (2013), p. 85.

[68] Miah (2008), p. 79.

[69] Ferrando (2013), p. 32.

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used as a synonym for the 'digital humanities,' a group of fields that are on the vanguard of the technologization of academia. Displaying a techno-enthusiasm similar to that of transhumanism, posthumanities of the latter sort advocate the replacement of "analog or literacy-based knowledge structures" with virtualized digital collections of data.[70]

Human nature and the posthumanities. Herbrechter notes that simply because critical posthumanism considers 'human nature' to be a cultural artifact, it is not obligated to claim that human nature is unworthy of study. Indeed, the critical posthumanities will be well-positioned to investigate human nature in a way that expands the scope of such a 'nature' in a deanthropocentrizing manner.[71] With its insights into the history, structure, and practices of various spheres of culture, cultural posthumanism can play a role in taking the critical methodologies developed within critical posthumanism and applying them across the current range of the humanities to develop nonanthropocentric and nonbinary posthumanities that can survive and thrive despite their loss of the concept of human nature that has historically served as the anchor of the humanities.[72]

Counteracting the forces of scientism. From the perspective of critical posthumanism, one important aim of the posthumanities is to ensure that disciplines such as philosophy, theology, history, and the arts continue to play a role in shaping our understanding of human nature and that fields such as neuroscience, biology, chemistry, and computer science do not appropriate for themselves the sole privilege and responsibility of defining what is and is not human. In this way, Herbrechter suggests that the posthumanities can help guarantee that binary and anthropocentric historical humanism is succeeded by a nondualistic and nonanthropocentric posthumanism rather than by a 'scientistic' posthumanism that simply replaces the transcendental idol of the human with a new transcendental idol of science.[73]

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[70] For the posthumanities as a possible driver (rather than critic) of digitalization, see Herbrechter (2013), p. 179.

[71] Herbrechter (2013), p. 168.

[72] This is similar to the previously discussed notion that posthumanism might serve as the rescuer of a faltering humanism. See Herbrechter (2013), p. 143.

[73] For the posthumanities as a bulwark against scientism, see Herbrechter (2013), p. 169.

4. Feminist New Materialism

Ferrando cites a range of 'new materialisms' that have arisen as a largely feminist response to late postmodernism; they represent a pushback against those forms of postmodernism that had resolved the historic 'nature versus nurture' debate by strongly emphasizing the importance of culture and education while downplaying the role of biology and matter in shaping human existence.[74] New materialism's link to posthumanism lies in the fact that rather than resolving such a binary question in one direction or the other, it dissolves the dualism that pits language and culture against biology and matter. As Ferrando explains, within new materialist thought "biology is culturally mediated as much as culture is materialistically constructed," and matter cannot be separated from the dynamic and performative process of its ongoing materialization.[75]

Herbrechter offers a similar account of the neovitalism that arises from a "feminist materialist, life-affirming tradition" which offers a critique of the more death-centered philosophy of, for example, Derrida. For Herbrechter, the posthumanist aspect of new materialism can be seen in its effort "to reposition the notion of 'life' outside propriety or impropriety, namely by 'deathropo-centring' and 'de-ontologizing' it."[76] He also notes that strong feminist elements have long been found within mainstream critical posthumanism; Haraway, for example, suggests that the posthumanizing dissolution of the boundary between human being and machine resulting from the technologization and cyborgization of our lives can also be exploited to dissolve other boundaries such as those relating to gender.[77]

5. Antihumanism

The term 'antihumanism' has been used to describe an array of phenomena that bear some relationship to posthumanism. Some forms of antihumanism are directly identified with posthumanism; for example, Miah characterizes Pepperell's theory of posthumanism – in which the technological tools that once gave humankind dominance over nature now threaten to

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[74] Ferrando (2013), pp. 30-31.

[75] Ferrando (2013), p. 31.

[76] Herbrechter (2013), p. 212.

[77] The recognition of such blurring boundaries has long been at the core of posthumanism. See Haraway (1991) and Herbrechter (2013), pp. 99-100.

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claim dominance over us – as a form of "*anti*-humanism, which is re-enlightened by modern science."[78] Other forms of antihumanism are described as diverging from posthumanism in key respects. For example, Ferrando conceptualizes 'antihumanism' as sharing a central tenet with posthumanism: namely, a radical critique of "modern rationality, progress and free will" that constitutes a "deconstruction of the notion of the human." However, the deconstruction offered by posthumanism argues that simple binaries such as 'human versus nonhuman' are no longer meaningful and that human beings are not (any longer) the only kinds of personal subjects that constitute our society. Antihumanism, on the other hand, claims that the binary of 'life versus death' is still meaningful – and that the human being, as such, is dead. Ferrando argues that while posthumanism draws much from the deconstructive approach of Derrida, antihumanism has more in common with the 'death of Man' propounded by Foucault.[79]

Drawing on Badmington, Herbrechter suggests that antihumanism is frequently just a well-disguised form of humanism, insofar as it does not develop its own independent perspective but instead simply defines itself as the negation of all that humanism stands for. However, denying the exclusive centrality of the 'human' is not the same thing as embracing the joint centrality of the 'human and nonhuman'; from the perspective of critical posthumanism, antihumanism thus presents an insufficient challenge to the fundamentally anthropocentric doctrines of humanism. While antihumanism remains locked into the binary patterns that characterize humanist thought, critical posthumanism makes a concentrated effort to break down those historical binaries, replacing them with richer and more sophisticated conceptual schemas.[80]

While the relationship of antihumanism to posthumanism is thus complex, building on Ferrando's analysis we would suggest that at least some forms of antihumanism have evolved to take on characteristics indicative of posthumanist thought. We would argue that such antihumanism is most naturally classified as a form of **analytic theoretical posthumanism**. While such antihumanism differs from critical posthumanism in its attitude toward binary frameworks and post-anthropocentrism, it shares critical posthumanism's rejection of simplistic post-Enlightenment humanism, its goal of developing

[78] See Miah (2008), p. 75, and Pepperell, *The Posthuman Condition: Consciousness Beyond the Brain* (2003).

[79] Ferrando (2013), pp. 31-32.

[80] Herbrechter (2013), p. 126.

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a more accurate understanding of the nature of humanity, and an emphasis on analyzing the state of humanity as it has come to exist rather than in some engineered form that it might take in the distant future.

6. Metahumanism as Rehumanism

There have arisen at least three independent uses of the term 'metahumanism.' These are: 1) metahumanism understood as a form of 'rehumanism,' as formulated by Sanbonmatsu; 2) metahumanism as an activist movement in support of those who have been subject to metahumanizing mutation, as formulated in numerous works of science fiction and fantasy; and 3) metahumanism as a philosophical and artistic approach and movement of relational 'metabodies,' as formulated by Del Val and Sorgner. We would argue that the first form of metahumanism constitutes a type of analytic theoretical posthumanism; it will thus be considered in more detail here. The second form of metahumanism will be discussed later as a form of synthetic practical posthumanism, and the third will be explored as a type of hybrid posthumanism that spans theoretical, practical, analytic, and synthetic spheres.

Writing in 2004, Sanbonmatsu formulated a concept of 'metahumanism' not as a form of posthumanism but rather as a critical response to and explicit rejection of it. He argues that within our contemporary world,

> [...] in the Western academy, cultural studies theorists and other academic intellectuals hold conferences celebrating our so-called post-human times, singing the virtues of cyborgs, prosthetics, and bioengineering. Post-humanism is merely the latest in a string of commodity concepts spun off by academic industrialists to shore up the crumbling appearance of use value in their work.[81]

In this view, posthumanism is presented as perhaps the most degenerate iteration of a disintegrating Western critical tradition, while metahumanism is proposed as a form of thought that can rescue the critical tradition by confronting and vanquishing posthumanism. In its contents, such metahumanism would essentially appear to be a reborn humanism operating under a different name. Thus Sanbonmatsu argues that "If critical thought is to survive this implosion of theory" represented by posthumanism, posthumanist thought must be challenged by a metahumanism that constitutes "a return

[81] Sanbonmatsu, *The Postmodern Prince: Critical Theory, Left Strategy, and the Making of a New Political Subject* (2004), p. 207.

to ontology and the grounding of thought in a meaningful account of human being" and which does not hesitate "to declare itself to be in defense of *this being that we are – or that we might become.*"[82]

Herbrechter considers Sanbonmatsu to be pursuing the "renewal of a leftist radical humanism in the name of a Kantian cosmopolitan tradition."[83] However, such metahumanism could instead arguably be understood as an idiosyncratic example of **analytic theoretical posthumanism**, insofar as it does not simply propose for adoption a naïve 19th-Century humanism that is unaware of the processes of technologization and posthumanization that have occurred during recent centuries. Rather than ignoring the rise of posthumanist thought, Sanbonmatsu's metahumanism explicitly critiques and seeks to learn from what it perceives as the errors of earlier posthumanist accounts. While such metahumanism can thus be viewed as an 'anti-posthumanism,' we would argue that it can alternatively be understood as a 'rehumanism' informed by posthumanist insights.

7. Neohumanism as the Embracing of Human Subjectivity

As is true for 'posthumanism' and 'metahumanism,' the term 'neohumanism' has been used to describe a divergent array of phenomena. For example, Herbrechter refers broadly to the discourse that pits "transhumanists versus neohumanists."[84] In that context, neohumanists can be understood as thinkers who disagree both with the postmodernist annihilation of the notion of humanity and the transhumanist idolization of a reengineered humanity; neohumanists seek to salvage the positive elements of humanism but in a manner that acknowledges ongoing processes of posthumanization. Similarly, Wolin employs the term when arguing that in his later works Foucault distanced himself from his earlier post-structuralist critique of modernity and formulated a new 'neohumanist' approach in which the existence of a free and thinking human subject is at least implicitly embraced.[85] If considered a form of posthumanism, such neohumanisms would take their place alongside critical posthumanism as a form of **analytic theoretical posthumanism**.

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[82] Sanbonmatsu (2004), p. 207.

[83] For this critique of Sanbonmatsu's metahumanism, see Herbrechter (2013), p. 71.

[84] Herbrechter (2013), p. 40.

[85] See Wolin, "Foucault the Neohumanist?" (2006), and Nealon, *Foucault Beyond Foucault* (2008), pp. 10-11.

B. Synthetic Theoretical Posthumanisms: Seeking to Understand a Future Posthumanity

Synthetic theoretical posthumanisms manifest a 'posthumanism of imagination' that creatively envisions hypothetical future posthumanities so that their implications can be explored.[86] Such forms of synthetic theoretical posthumanism include philosophical posthumanism, science fiction, prehumanism, and techno-idealism. We can consider each of these in more detail.

1. Philosophical Posthumanism

Philosophical posthumanism combines critical posthumanism's academic rigor with science fiction's practice of imagining possible future paths for the processes of posthumanization. It is a **synthetic theoretical posthumanism** insofar as it constructs scenarios of future posthumanities and its goal is to deepen human knowledge rather than to generate some economic, political, or technological impact.

Philosophical posthumanism draws on the insights of critical and cultural posthumanism, integrating them into traditional methodologies of philosophical inquiry in order to reassess earlier philosophical claims with a new awareness of the ways in which philosophy has been suffused with "anthropocentric and humanistic assumptions" that limit its scope, comprehensiveness, and effectiveness.[87] Moreover, as philosophy reflects on processes of posthumanization to envision the ways in which they will reshape ontology, epistemology, and ethics, this generates a new process of 'philosophical posthumanization' that takes its place alongside other technological and social forms of posthumanization.[88]

Origins in critical and cultural posthumanism. Ferrando recounts that during the 1990s feminists within the field of literary criticism developed critical posthumanism, which interacted with cultural posthumanism to give rise to philosophical posthumanism by the end of the decade.[89] Similarly, Miah considers the cyborg expositions of Haraway and Gray, the posthumanism of Hayles

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[86] As previously noted, an exception to this temporal pattern is prehumanism, which considers fictional or hypothetical beings of the far-distant past as an alternative to positioning them in the far-distant future.

[87] Ferrando (2013), p. 29.

[88] Herbrechter (2013), p. 176.

[89] Ferrando (2013), p. 29.

"A Typology of Posthumanism: A Framework for Differentiating Analytic, Synthetic, Theoretical, and Practical Posthumanisms," excerpted from Gladden, Matthew E., Sapient Circuits and Digitalized Flesh: The Organization as Locus of Technological Posthumanization. Indianapolis: Defragmenter Media, 2016, pp. 31-91. ISBN 978-1-944373-00-9 (print) and 978-1-944373-01-6 (ebook).

and Fukuyama, and Bostrom's transhumanism to have contributed to the development of philosophical posthumanism.[90] Philosophical posthumanism can be understood either as a form of philosophy that has adopted elements of posthumanist thought or as a new form of critical and cultural posthumanism that has chosen to focus its attention on traditional philosophical questions.

The differences between philosophical and cultural posthumanism, in particular, are frequently blurred. Even Miah, who clearly distinguishes philosophical posthumanism from its biopolitical and cultural siblings, notes that the analyses offered by philosophical posthumanism are often "inextricable from other cultural critiques." However, it is possible to identify differences between the two fields; for example, Miah suggests that while cultural posthumanism (as represented by Haraway and Hayles) is "intended to disrupt uniform ideas about what it means to be human and the social and political entitlements this might imply," philosophical posthumanism typically focuses on ontological, phenomenological, and epistemological questions surrounding scenarios of future technologization.[91]

Envisioning future posthumanity. Like cultural posthumanism, philosophical posthumanism contemplates not only current processes of technologization but also hypothetical futuristic technologies that do not yet exist but which have been envisioned in works of science fiction. While cultural posthumanism analyzes such fictional future technologies as a means of diagnosing current humanity's desire for or fear of further posthumanization, philosophical posthumanism uses hypothetical technologies as the bases for thought experiments that explore the ontological, epistemological, ethical, legal, and aesthetic implications of such future posthumanization. By exploiting philosophical methodologies and a knowledge of science and technology, such thought experiments allow philosophical posthumanists to understand the ways in which human nature may be transformed or superseded through

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[90] See Miah (2008), p. 80; Haraway, "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s" (1985); Gray, "The Ethics and Politics of Cyborg Embodiment: Citizenship as a Hypervalue" (1997); Gray (2002); Hayles (1999); Fukuyama (2002); and Bostrom, "A History of Transhumanist Thought" (2005).

[91] Miah (2008), pp. 79-80.

future posthumanization – without necessarily advocating or opposing such transformations in the way that a biopolitical posthumanist would.[92]

The phenomenon of environmental posthumanization. As conceptualized by Miah, a notable characteristic of philosophical posthumanism is that it does not focus on changes to human beings *per se* as the primary manifestation of posthumanization.[93] Instead, philosophical posthumanism posits a broader phenomenon in which posthumanization is occurring throughout the world as a whole. For example, the proliferation of social robots, artificial general intelligences, artificial life-forms, virtual worlds, ubiquitous computing, and the Internet of Things is expected to create a rich digital-physical ecosystem in which human beings are no longer the only – or perhaps even the most significant – intelligent actors. Such a post-anthropocentric and post-dualistic world would already possess a strongly posthuman character regardless of whether human beings undergo processes of biotechnological transformation or choose to remain in their 'natural' biological form.

Some strains of philosophical posthumanism effectively update historical Darwinian biological materialism for the age of artificial life, viewing the posthuman world as a place in which the differences between human beings and animals, human beings and robots, and human beings and electronic information systems are increasingly ones of degree rather than kind.[94] The relationship between the human and machine is explored especially by considering entities such as cyborgs in which those two realms have become physically and behaviorally fused.[95] It also addresses the ontological and ethical implications of new kinds of entities such as artificial general intelligences that have not yet been created in practice but for whose development much theoretical groundwork has been laid; this gives philosophical posthumanism a stronger future orientation than critical posthumanism, which is more concerned with ethical and social realities of our current day.

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[92] Regarding philosophical posthumanism's dispassionate analysis of processes of posthumanization, see, e.g., Miah (2008), p. 79.

[93] Miah (2008), pp. 80-81.

[94] For philosophical posthumanism's consideration of evolutionary processes in biological and non-biological entities, see Miah (2008), p. 82.

[95] Miah (2008), pp. 80-81.

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2. Science Fiction

Herbrechter suggests that true science fiction is "the most posthumanist of all genres," as it takes seriously – and often advances – the ongoing "dissolution of ontological foundations like the distinction between organic and inorganic, masculine and feminine, original and copy, natural and artificial, human and nonhuman."[96] In its most representative form, science fiction attempts to construct coherent visions of a near- or far-future posthumanized world so that its nature and implications can be investigated; for this reason, science fiction can be categorized as a **synthetic theoretical posthumanism**.[97]

Science fiction versus posthumanist reflection on science fiction. It is important to distinguish science fiction itself from scholarly analysis *of* science fiction. While science fiction typically constitutes a form of synthetic theoretical posthumanism, the reflection on science fiction that is carried out, for example, by cultural posthumanists is often a form of analytic theoretical posthumanism. From the perspective of cultural posthumanism, science fiction's relevance does not depend on it portraying future technologies that are in fact strictly realizable; rather it is relevant because it reflects society's current 'cultural imaginary' and can thus be used to diagnose humanity's attitude toward the processes of technologization and posthumanization.[98] In a related fashion, when transhumanism draws inspiration from works of science fiction to spur the real-world pursuit of particular futuristic technologies, it constitutes a form of synthetic practical rather than synthetic theoretical posthumanism.

Science fiction and the genesis of posthumanism. From its birth, the field of posthumanism has been tied to the world of science fiction. Indeed, the work generally considered to contain the earliest allusion to a critical posthumanism, Hassan's 1977 text "Prometheus as Performer: Toward a Posthumanist Culture? A University Masque in Five Scenes," explicitly cites the film *2001: A Space Odyssey* and dawning questions about artificial intelligence as being

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[96] Herbrechter (2013), pp. 115-17.

[97] Building on Poster and Hayles, Herbrechter notes that the cyberpunk genre in particular – which attempts to construct realistic and realizable visions of a near-future technologized posthumanity – has most explicitly grappled with the nature of human beings as embodied informational processes and the ramifications of posthumanizing technologies that are expected to break down traditional humanist binaries and reshape the experience of human existence within the coming decades. See Goicoechea (2008); Poster, *What's the Matter with the Internet?* (2001); Hayles, *My Mother Was a Computer: Digital Subjects and Literary Texts* (2005); Hayles (1999); and Herbrechter (2013), p. 187.

[98] Herbrechter (2013), p. 117.

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relevant to understanding the "emergent [...] posthumanist culture."[99] If posthumanism has always drawn on certain forms of science fiction, Miller suggests that – in complementary fashion – science fiction has always constituted a form of posthumanism. While 'posthumanism' as such may only have been labelled and defined during the last few decades, science fiction had already existed for centuries as an unrecognized form of posthumanism; only recently has critical theory begun to follow science fiction's example of radically reassessing the limits of human nature and the social and technological structures that circumscribe the meaning of 'the human.'[100]

Distinguishing science fiction from popular ('commercial') posthumanism. In places, Herbrechter writes of science fiction as though it were essentially a commercial enterprise whose contents are formulated by large corporations with the goal of maximizing revenue and profits – rather than a serious literary and artistic endeavor whose contents are crafted by individual authors, filmmakers, and game designers as a means of exploring difficult philosophical, political, and social issues facing humanity. Thus he emphasizes the "rather close 'co-operation' between science fiction, the film industry and its lobbies and the discourse on posthumanity in general."[101] However, such a view appears to be an oversimplification. We would argue that in the context of posthumanism, the phrase 'science fiction' is frequently used to refer to two spheres of human activity which are so qualitatively different in nature that they are better classified as two entirely different forms of posthumanism.

We would suggest that the term 'science fiction' be reserved for the first of these two types of posthumanism, which involves the construction of fictional scenarios (often set in the future) as a means of exploring the profound ontological, biological, ethical, social, and cultural implications of posthumanization. Works of science fiction are, in a sense, thought experiments similar to those utilized within philosophical posthumanism. However, while philosophical posthumanism employs the rigorous methodologies and critical apparatus of philosophy, science fiction exploits the freedom to draw on more artistic and less formally academic methodologies. Works such as paintings, sculpture, or music with science-fiction themes can explore the 'mood' or 'ethos' of posthumanization in a general sense. Artistic forms such

[99] See Hassan, "Prometheus as Performer: Toward a Posthumanist Culture? A University Masque in Five Scenes" (1977), and its discussion in Herbrechter (2013), p. 33.

[100] This point is made in Miller (2012), p. 164.

[101] Herbrechter (2013), p. 39.

as films or novels can present more detailed diegetic content but are consumed in a manner that is still largely passive. However, interactive media such as computer games and tabletop roleplaying games can put their human players in situations in which they face complex ethical dilemmas and must actively confront challenges associated with new posthumanized ways of being. As noted above, because of its emphasis on imagining future posthumanities and the fact that it is primarily geared at deepening human knowledge, science fiction can be best understood as a form of **synthetic theoretical posthumanism**.

The second kind of posthumanism that is sometimes described as a type of 'science fiction' (and which Herbrechter indeed takes to be the most representative form of science fiction) is what we would refer to as 'popular' (or 'commercial') posthumanism to distinguish it from science fiction proper. Examples of popular posthumanism include films, television series, and other works that are created either to generate maximum profits by engaging mass audiences or to condition the public to accept certain future actions by governments, corporations, or other institutions. Like posthumanist science fiction, popular posthumanism often employs storylines that are set in the future and which feature cyborgs, androids, artificial general intelligences, genetic engineering, virtual reality, and other posthumanizing technologies. However, rather than attempting to confront and thoughtfully explore the philosophical implications of such phenomena, popular posthumanism exploits posthuman themes instrumentally as a means of achieving some practical goal – such as generating revenue from movie ticket sales.

Some artistic products function simultaneously as works of both posthumanist science fiction and popular posthumanism; in practice, the division between these two types is rarely absolute. Nevertheless, the divergence in the goals of posthumanist science fiction and popular posthumanism can often be seen, for example, in the difference between complex original literary works and their later adaptations into Hollywood blockbuster films that feature a drastic simplification of the works' philosophical content coupled with more frequent explosions and a happy ending in which the protagonist defeats the (often technologically facilitated) threat to humanity.[102] Popular posthumanism will be considered in more detail later as a form of synthetic practical posthumanism.

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[102] For example, consider Asimov's *Robot* series of stories and novels as compared with the 2004 Will Smith cinematic vehicle, *I, Robot*.

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3. Prehumanism

While some works of science fiction envision the extremely far future, other forms of theoretical posthumanism envision the extremely distant past. For example, some proponents of cultural materialism emphasize the billions of years that passed before intelligent life appeared on earth. These vast foregone eons are highlighted not because the events that occurred within them are of direct interest to posthumanism but because they contextualize and deanthropocentrize our present moment; they emphasize the fact that the universe is not dependent on humanity for its existence or meaning and that the whole era of humankind's flourishing is only a fleeting instant in comparison to the lifespan of the cosmos as a whole.[103] Practitioners of what might be called 'prehumanism' are not interested in performing a literal scientific reconstruction of the biological or anthropological characteristics of the precursors of modern human beings but rather in imagining such prehistoric beings from a metaphorical or hypothetical perspective in order to better appreciate the relationship of contemporary humanity to the timescale of the universe.

'Prehumanist' approaches generally constitute forms of **synthetic theoretical posthumanism**, insofar as they are grounded in imagination rather than critique. Herbrechter notes, for example, that the world of posthumanist speculative fiction includes not only works that explore future spaces but also ones that explore "fictional pasts or *verfremdet* (defamiliarized) presents."[104] As a posthumanist approach that looks back imaginatively to the past, prehumanism thus constitutes a mirror image of the posthumanist science fiction that looks ahead imaginatively to the future.[105] Works such as the cosmic horror literature of H.P. Lovecraft that feature alien entities that have existed for millions of years (or in a timeless parallel dreamworld) can be understood

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[103] See Herbrechter (2013), pp. 9-10.

[104] Such products are by no means limited to science fiction but can include works of any genre and theme that disorient and challenge their characters and readers. See Herbrechter (2013), p. 116.

[105] As described here, prehumanism is thus not 'pre-humanist' in the sense of considering the world that existed before the appearance of humanism but rather 'prehuman-ist' in the sense of considering the world that existed before the appearance of human beings. The usage described here thus differs from the way in which the terms 'prehumanism' and 'prehumanist' are employed in, e.g., Berrigan, "The Prehumanism of Benzo d'Allesandria" (1969), and Witt, "Francesco Petrarca and the Parameters of Historical Research" (2012), to refer to time periods that preceded and concepts that foreshadowed those of Renaissance humanism.

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as examples of such prehumanism.[106] Other works such as *2001: A Space Odyssey* simultaneously constitute both: 1) prehumanism that uses the distant past as a setting for imagining a 'quasi-human' that already was; and 2) posthumanist science fiction that looks into the future to imagine a 'quasi-human' that has not yet been.[107]

4. Techno-idealism

Techno-idealism is a form of posthumanist thought closely linked to but distinct from transhumanism. It involves the belief that the sole essential part of a human being is the mind and that this 'mind' consists of a particular pattern of information. Because only a mind's pattern of information – and not the physical substrate in which the information is stored – is relevant, all of a brain's biological neurons can be replaced one by one with electronic replicas, and as long as the pattern of interactions found within the brain's neural network is preserved intact, the person's mind, consciousness, and identity would continue to exist within its new (and undying) robotic shell. From the perspective of techno-idealism, human beings' physical biological bodies are ultimately interchangeable and replaceable with physical robotic bodies or potentially even virtualized ones.

Contrast with critical posthumanism. Herbrechter portrays techno-idealists as yearning for 'technoscientific utopias' in which human engineers will someday unravel the mysteries of genetics, thereby allowing biological life to finally be transformed into pure, disembodied information; in this way, virtuality becomes a means to immortality as human beings "gain control over the 'book of life'."[108] He contrasts techno-idealism's naïve understanding of the nature of the human mind with the more thoughtful and incisive analyses conducted within critical and philosophical posthumanism. Indeed, Herbrechter suggests that critical posthumanism can largely be understood as an effort to defend the material anchoring of humanity against those techno-idealists who seek to virtualize and disembody everything – as manifested, for example, in their advocacy of mind uploading.[109]

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[106] See, e.g., Lovecraft, *The Dunwich Horror and Others* (1983) and *At the Mountains of Madness and Other Novels* (1985).

[107] See Kubrick's *2001: A Space Odyssey* (1968).

[108] Herbrechter (2013), pp. 103, 171.

[109] Herbrechter (2013), p. 95.

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Complementarity to transhumanism. The 'posthumanity' envisioned by techno-idealism is one of hypothetical future entities like full-body cyborgs and uploaded minds. Techno-idealism does not, in itself, actively seek to engineer such beings but rather to develop conceptual frameworks for exploring their nature, capacities, and behavior; it can thus be understood as a form of **synthetic theoretical posthumanism**. However, in practice techno-idealist frameworks are often formulated by committed transhumanists seeking an intellectual justification for their concrete practical endeavors. Drawing on Krüger, Herbrechter traces the development of a 'radical techno-idealism' from Wiener's cybernetics, the futurology of the incipient Space Age, and the cryonics movement to figures such as More, Minsky, Moravec, Kurzweil, and contemporary transhumanist performance artists.[110] For many such individuals, the techno-idealism which says that human beings *can* achieve immortality through the development of transformative technologies is paired with a technological determinism which says that humanity inevitably *will* create and implement such technologies.[111]

It is not necessary, however, for transhumanists to hold techno-idealist beliefs. For example, one could conceivably deny that an uploaded mind is a 'true' human mind – while simultaneously arguing that such artificial intelligences should nonetheless be developed to serve as successors to humanity and a next step in the evolution of sapient intelligence within our world. Someone holding such a view would be a transhumanist but not a techno-idealist. Conversely, a person could conceivably accept the claim that a biological human brain can be gradually replaced by an electronic brain without destroying its owner's 'mind' – but without feeling the slightest inclination to see any human being undergo such a procedure. Indeed, such a person might feel a sense of revulsion at the idea that causes him or her to oppose the development of such technologies, even while accepting their efficacy on an intellectual level. Such an individual would be a techno-idealist but not a transhumanist.

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[110] See Krüger, *Virtualität und Unsterblichkeit* [Virtuality and Immortality] (2004), as discussed in Herbrechter (2013), p. 103.

[111] On this frequent pairing of theoretical and practical posthumanism, see Herbrechter (2013), p. 103.

"A Typology of Posthumanism: A Framework for Differentiating Analytic, Synthetic, Theoretical, and Practical Posthumanisms," excerpted from Gladden, Matthew E.,
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C. Analytic Practical Posthumanisms: Seeking to Reshape the Posthumanized Present

Analytic practical posthumanisms seek to reshape an already-existing posthumanized world. They can be understood as constituting a 'posthumanism of conversion' that is aimed at changing hearts and minds and influencing the way in which human beings view and interact with their contemporary environment. Such forms of analytic practical posthumanism include some forms of metahumanism and neohumanism, which we describe in more detail below.

1. Metahumanism as Advocacy for Those Who Have Experienced Metahumanizing Mutation

Since the 1980s, the term 'metahuman' has been used within a range of science-fiction, superhero, and fantasy literature and roleplaying games to refer to a human being who has undergone a mutation or transformation that grants the individual a new physical form or altered sensory, cognitive, or motor capacities; the mechanics of the transformation may be portrayed as technological, magical, or otherwise preternatural in nature.[112] The term 'metahumanity' is employed within such a fictional world to describe either its typically diverse collection of metahuman beings or the state of being a metahuman. Within the context of such a fictional world, 'metahumanism' can describe either: 1) the condition of possessing metahuman characteristics (which can be viewed by different individuals as a blessing or a curse); or 2) a political or social movement that works to promote the safety, welfare, and basic rights of metahumans, who often suffer discrimination as a result of the radical otherness that can terrify or appall 'normal' human beings.

a. Anti-metahumanism as Discrimination Against Metahumans

Within such a fictional context, 'anti-metahumanism' describes an opposing political, social, or religious movement that views metahumans either as a lesser form of being whose activities must be supervised, a threat to the

[112] See Ferrando (2013), p. 32. Perhaps the earliest published use of the term 'metahuman' in this sense (in particular, as an adjective referring to superhuman powers or abilities gained as a result of infection by an extraterrestrial virus) was in the anthology set in the shared *Wild Cards* superhero universe published in 1986. See, e.g., Milán, "Transfigurations" (p. 264) and "Appendix: The Science of the Wild Card Virus: Excerpts from the Literature" (p. 403), in *Wild Cards*, edited by Martin (1986).

welfare of regular human beings, or inherently evil.[113] Such oppression is typically described as being inflicted by natural, non-metahumanized human beings, although metahumans themselves are capable of displaying anti-metahuman attitudes and behaviors.

B. Classifying Metahumanism within the Fictional and Real Worlds

When classifying them as forms of posthumanism, metahumanism and anti-metahumanism can be understood from two perspectives, namely: 1) as they function within the fictional world in which they appear; and 2) as devices created by authors, filmmakers, or game designers and consumed by audiences within our contemporary real world. Within the fictional worlds in which they exist as political and social movements, metahumanism and anti-metahumanism depict a form of **analytic practical posthumanism**, insofar as they focus on an already existing (within the work's fictional timeline) posthumanity and either advocate for the adoption of particular policies or work directly to empower or suppress metahumanity.

However, within our real world, such fictional depictions of metahumanism and anti-metahumanism play a broader range of roles. Some creators of fictional works employ metahumans (and the reactions to them) as a means of critiquing our real-world presumptions and encouraging audiences to probe their own understanding of what it means to be human. In these cases, it is not being claimed by an author that posthumanized beings displaying those exact characteristics might someday come to exist; rather, metahumanity is being used as a device to compel contemporary audiences to consider their own humanity. Such metahumanism and anti-metahumanism serve as a form of **analytic posthumanism** that is either **theoretical** or **practical**, depending on whether it fills the role of a thought experiment or is intended to alter the way that audiences treat other human beings (or animals, artificial intelligences, and other nonhuman beings).

Other fictional works may feature metahumanism and anti-metahumanism in order to help audiences explore the many possible forms that future posthumanity might take and understand the interrelationships between posthumanizing technologies such as genetic engineering, neuroprosthetics,

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[113] For a depiction of anti-metahumanism, e.g., within the fictional universe of the *Shadowrun* roleplaying game, see the *Sixth World Almanac*, edited by Hardy & Helfers (2010), pp. 23, 35, 49, 54, 57, 79, 142.

and artificial intelligence. Such works are often forms of **synthetic theoretical posthumanism**;[114] however, they may also display aspects of **synthetic practical posthumanism**, if designed to foster attitudes of acceptance toward future metahuman beings.

3. Neohumanism as Advocacy for Engineered Beings

One variety of 'neohumanism' was described in an earlier section as a type of analytic theoretical posthumanism. The term 'neohuman' has also been used within the context of science fiction to describe genetically engineered human beings who possess a genotype derived from and similar to that of natural human beings but who have been given enhanced sensory, motor, and cognitive capacities. While some fictional neohumans are presented as relishing the engineered capacities that make them 'superior' to natural human beings, others resent these traits that they never chose to possess and which cause them to be seen as something other than fully human. Rather than emphasizing the engineered characteristics that set them apart, such neohumans may instead accentuate those shared genetic traits that link them with (the rest of) humanity.[115]

In such a context, 'neohumanism' would involve advocacy for the development of such engineered beings or defense of the rights and welfare of such persons, thus resembling metahumanism in its form of support for those who have experienced metahumanizing mutation. Such neohumanism would be a form of **analytic practical posthumanism** within the fictional worlds in which it is depicted, but it could be either **analytic** or **synthetic** and either **theoretical** or **practical** if evaluated according to the real-world reasons for which a creator of fiction decided to include it in his or her work.

4. Neohumanism as Spiritual Ultrahumanism

Another application of the term 'neohumanism' is in describing a holistic and universalist philosophy developed by Sarkar that is grounded in Tantric

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[114] This is especially true of works featuring future worlds in which metahumans can choose at least some of their 'nonhuman' traits, such as characters who acquire neuroprosthetic enhancements or study magic within the *Shadowrun* universe. Similarly, in many tabletop roleplaying games and computer games, a game's contemporary human player must invest significant time and care in selecting his or her character's metahuman characteristics from among a complex system of physical and cognitive attributes, advantages, disadvantages, skills, and equipment and possessions. See, e.g., the *Shadowrun: Core Rulebook 5*, edited by Killiany & Monasterio (2013).

[115] See *Interface Zero 2.0: Full Metal Cyberpunk*, developed by Jarvis et al. (2013), p. 107.

"A Typology of Posthumanism: A Framework for Differentiating Analytic, Synthetic, Theoretical, and Practical Posthumanisms," excerpted from Gladden, Matthew E., Sapient Circuits and Digitalized Flesh: The Organization as Locus of Technological Posthumanization. Indianapolis: Defragmenter Media, 2016, pp. 31-91. ISBN 978-1-944373-00-9 (print) and 978-1-944373-01-6 (ebook).

spiritual principles[116] and manifested in particular religious practices, works of art and literature, humanitarian and animal-rights initiatives, and a global network of schools guided by "a transcivilizational global pedagogy."[117] The goal of such a neohumanism is:

> [...] to relocate the self from ego (and the pursuit of individual maximization), from family (and the pride of genealogy), from geo-sentiments (attachments to land and nation), from socio-sentiments (attachments to class, race and religious community), from humanism (the human being as the centre of the universe) to Neohumanism (love and devotion for all, inanimate and animate, beings of the universe).[118]

This nominal dislocation of the human being from its historical position as the 'center of the universe' appears to have much in common with the post-anthropocentric attitude that is developed, for example, within critical posthumanism. However, that similarity is arguably superficial. Elsewhere, Sarkar writes that:

> Neohumanism will give new inspiration and provide a new interpretation for the very concept of human existence. It will help people understand that human beings, as the most thoughtful and intelligent beings in this created universe, will have to accept the great responsibility of taking care of the entire universe – will have to accept that the responsibility for the entire universe rests on them.[119]

Ferrando argues that some forms of transhumanism can actually be understood as an 'ultrahumanism' that seeks to advance post-Enlightenment rationality and scientific progress to its logical conclusion, thereby consummating humanism rather than superseding it.[120] A similar account might be offered of Sarkar's neohumanism: rather than rejecting the humanist vision of human beings as the supreme intelligent agents charged with exercising dominion over nature, neohumanism seeks to cement the position of human beings as the 'center of the universe' – albeit a center that serves as a loving caretaker for the rest of creation.[121]

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[116] See the "Foreword" to *Neohumanist Educational Futures: Liberating the Pedagogical Intellect*, edited by Inayatullah et al. (2006).

[117] "Foreword," *Neohumanist Educational Futures* (2006).

[118] "Foreword," *Neohumanist Educational Futures* (2006).

[119] Sarkar (1982).

[120] Ferrando (2013), p. 27.

[121] Indeed, Sarkar claims explicitly that "Neohumanism is humanism of the past, humanism of the present and humanism – newly explained – of the future." See Sarkar (1982).

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Such neohumanism is **analytic**, insofar as it focuses its attention on the human beings who already exist today and the sociotechnological reality within which they are embedded. While such neohumanism possesses many elements that are explicitly philosophical in nature, the neohumanist project is geared primarily toward creating a movement whose adherents alter their daily lives to incorporate particular spiritual practices and who establish and operate schools, charitable institutions, and other organizations that embody the movement's philosophy; in this sense, neohumanism can be understood as a **practical** rather than theoretical posthumanism.

D. Synthetic Practical Posthumanisms: Seeking to Control the Processes Generating a Future Posthumanity

Synthetic practical posthumanisms reflect a 'posthumanism of control' that seeks to initiate, accelerate, guide, limit, or block future processes of posthumanization – typically through regulating the development of new technologies or through other political, economic, or social mechanisms. Such forms of synthetic practical posthumanism include biopolitical posthumanism (which itself includes bioconservatism and transhumanism) and popular or 'commercial' posthumanism. We can consider these in more detail.

1. Biopolitical Posthumanism

Biopolitical posthumanism encompasses a range of posthumanisms that all envision the engineering of a future 'posthumanity' but which differ in their assessment of whether such a development is desirable or undesirable. Biopolitical posthumanisms manifest a strong future orientation: they attempt to predict the long-term impact of pursuing particular new biotechnologies and – based on such predictions – work to actively facilitate or impede the creation of such technologies by spurring political or regulatory action, influencing public opinion, advancing scientific research and technology commercialization, or through other means. Such biopolitical posthumanisms are **synthetic** insofar as they understand posthumanity to be a collection of future beings whose creation can be purposefully brought about or avoided, and they are **practical** insofar as they seek to actively accomplish or block the advent of such posthuman beings.

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Contrasting attitudes toward posthumanity. Different forms of biopolitical posthumanism are distinguished by their attitude toward biotechnological posthumanization. For Miah, biopolitical posthumanism can be divided fairly neatly into the opposing camps of 'bioconservative' thinkers like Fukuyama and 'technoprogressive' or transhumanist thinkers like Stock. Bioconservatives see the advent of posthumanity as a negative or retrogressive step – a loss of human dignity and a destruction of the characteristic essence that makes human beings unique – while technoprogressives see the arrival of posthumanity as an advance by which human nature is beneficially enhanced or its limits transcended.[122]

Birnbacher argues that the concept of 'posthumanity' is in itself value-neutral;[123] however, one could contend that for biopolitical posthumanists, 'posthumanity' is in fact an intensely *value-laden* term – but one whose 'authentic' value is disputed by two opposed ideological groups. Such an interpretation is consistent with Miah's observation that for some bioconservatives, the very word 'posthumanism' is presumed to represent a world so obviously horrific and morally bankrupt that little need is seen to offer specific arguments about why the creation of a 'posthuman' world should be avoided.[124]

Having reviewed biopolitical posthumanism in general, it is worth exploring in more depth its two most prominent forms: bioconservatism and transhumanism.

A. Bioconservatism

Bioconservatism is a form of posthumanism that came into existence largely as a rejection of the tenets of another form of posthumanism – namely, transhumanism.[125] For bioconservatives, the arrival of the posthu-

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[122] See Miah (2008), pp. 73-74. 'Factor X' is the term used by Fukuyama to describe the essence of humanity that is vulnerable to being corrupted through the unrestrained application of biomedical technology. This can be compared and contrasted, e.g., with the idea of 'essence loss' within the fictional *Shadowrun* universe. See Fukuyama (2002) and *Shadowrun: Core Rulebook 5* (2013), pp. 52-55, 396-97.

[123] Birnbacher (2008), p. 95.

[124] Miah (2008), pp. 74-75.

[125] Herbrechter (2013), pp. 36-37.

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manity envisioned by transhumanism would bring about the 'dehumanization' of the human species.[126] Fukuyama is frequently cited as an eminent bioconservative as a result of his writing and public debating in opposition to transhumanism during his time as a member of the U.S. President's Council on Bioethics in the early 2000s. Habermas is also often cited as a leader in the world of bioconservative thought: while much of his work is highly theoretical, it includes a call to action that points toward practical applications, and the critiques and conceptual frameworks that he has developed provide a philosophical foundation for bioconservatism.[127]

Bioconservatism is a **synthetic posthumanism** insofar as it focuses its attention on hypothetical and emerging technologies that can potentially be used to engineer new quasi-human biological species or cyborgs that differ greatly from human beings as they exist today. It is a **practical posthumanism** insofar as it attempts to block the creation of such future posthumanized beings by rallying public opinion to support particular political and social initiatives; developing and promoting treaties, legislation, regulations, and policies for adoption by governments; pressuring companies, universities, and other institutions engaged in transhumanist programs to curtail such activities; and encouraging individual consumers to change the ways in which they spend their money and time.

Concerns regarding the social impact of posthumanization. Typical bioconservatism does not focus on the psychological, phenomenological, or ontological consequences of posthumanization for the individual posthumanized being. Instead, it sketches out the broad negative impacts that biotechnological posthumanization will supposedly have for human society as a whole – for example, by weakening government protections for human rights, lowering the ethical standards of corporations, creating economic injustice, pressuring entire social classes of human beings to modify themselves in order to compete economically, and perhaps even sparking civil war between those transhuman beings who have been genetically and cybernetically 'enriched' and those natural human beings who, comparatively speaking, are genetically and cybernetically 'deprived.'[128] This emphasis on broad social concerns is re-

[126] Birnbacher (2008), p. 97.

[127] Herbrechter (2013), pp. 161-62.

[128] Miah (2008), pp. 73-74; Herbrechter (2013), p. 45, 162.

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flected in Bostrom's characterization of the five main objections that bioconservatism offers to the purposeful creation of posthumanized beings – namely, that: 1) "It can't be done"; 2) "It is too difficult/costly"; 3) "It would be bad for society"; 4) "Posthuman lives would be worse than human lives"; and 4) "We couldn't benefit."[129]

B. Transhumanism

Transhumanism shares with analytic posthumanism its origins in the late 1980s and early 1990s and a "perception of the human as a non-fixed and mutable condition"; in other ways, though, the two perspectives are quite different.[130] Transhumanism does not look back into humanity's past to diagnose the social and technological legacy that we have inherited; instead it looks ahead to the future – and in particular, to the 'enhanced' human, quasi-human, or parahuman species that can be fashioned through the intentional application of genetic engineering, nanotechnology, cryonics, 'mind uploading,' and other emerging or hypothetical technologies.[131]

Understanding of posthumanity. Bostrom uses the word 'posthuman' in a concrete functional sense to refer to an engineered being that possesses at least one 'posthuman capacity' exceeding what is possible for natural human beings.[132] In Bostrom's conception of posthumanity, posthuman beings will not necessarily constitute the entirety – or even a large percentage – of future human society. Indeed, because of the cost and difficulty of the bioengineering equipment and techniques that are needed to create posthuman beings, it is likely that such beings will at least initially represent only a small portion of human society. This **synthetic** understanding differs from analytic forms of posthumanism in which all human beings are already considered to be posthumanized, insofar as we live in a world that is posthuman.

Attitude toward posthumanity. The attitude toward posthumanity expressed by Bostrom can be taken as typical of transhumanists more generally. Bostrom makes a nominal effort at suggesting that he is neutral regarding the question of whether posthumanity represents a step forwards or backwards in human development; he acknowledges that while transhumanism is only concerned

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[129] Bostrom (2008), p. 109.

[130] For an account of the origins of such forms of posthumanism, see Ferrando (2013), p. 26.

[131] Ferrando (2013), p. 27.

[132] Bostrom (2008), p. 108.

with creating forms of posthumanity that are "very good," there are undoubtedly other "possible posthuman modes of being" that would be "wretched and horrible."[133] Elsewhere, however, Bostrom appears to define posthumanity in such a way that it can only be a beneficial phenomenon. For example, he defines a 'posthuman being' not merely as one that has been technologically engineered to possess characteristics differing from those naturally possessed by human beings but as one who has been technologically engineered to possess either: 1) an enhanced "capacity to remain fully healthy, active, and productive, both mentally and physically"; 2) enhanced "general intellectual capacities [...], as well as special faculties such as the capacity to understand and appreciate music, humor, eroticism, narration, spirituality, mathematics, etc."; or 3) an enhanced "capacity to enjoy life and to respond with appropriate affect to life situations and other people."[134] Bostrom's view of 'posthumanity' is thus not value-neutral but strongly value-laden, as it would automatically exclude from being considered 'posthumanizing' any future technology that results in injury to human beings' health, a degradation of their cognitive capacities, or an impairment to their ability to enjoy social interactions – even if the technology were developed as part of a transhumanist bioengineering project whose explicit goal was to bring about the creation of posthumanity and its negative impacts were an unintended effect.[135]

Transhumanism as activism and project. In the understanding described above, 'posthumanity' is positioned as though it were a new form of space travel or nuclear power whose costs and benefits can be carefully weighed by a government panel that then decides whether to appropriate funds to bring such technology into existence or to ban the technology and prevent its development. This understanding is quite different from that of analytic posthumanism, which believes that posthumanity is inevitable because it is already here, and that the fundamental question is not whether one should seek to actively bring about or prevent the world's posthumanization but how to interpret it.

Critique from the perspective of critical and cultural posthumanism. Transhumanism involves efforts to intentionally engineer a new human species through the

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[133] This passing acknowledgement is found within an otherwise vigorous defense of the goal of engineering posthumanity. See Bostrom (2008), p. 108.

[134] Bostrom (2008), p. 108.

[135] Identifying posthumanity with an 'enhanced' humanity reflects an optimistic assumption that all posthumanizing bioengineering efforts will be driven by a well-intentioned (and effective) vision of 'improving' human nature and not, for example, by a desire to produce quasi-human workers, test subjects, toys, or personal companions that possess a diminished human nature and whose creation is driven by the self-interest of particular governments, corporations, or individual consumers.

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use of emerging biotechnologies. It thus typically focuses on the technological posthumanization of humanity and ignores the many nontechnological ways in which posthumanization has been occurring for centuries. Ferrando notes that cultural and critical posthumanism are inclined to negatively assess such an approach. From their perspective, transhumanism appears to possess an overly simplistic conceptualization of the world: it is willing to perpetuate a post-Enlightenment vision of 'human exceptionalism' that places human beings in a hierarchy over nonhuman animals and nature – and indeed, transhumanism further expands this stratification of being by creating a new 'hierarchy of hierarchies' in which a soon-to-be-engineered posthumanity will peer down from its superior vantage point outside of the natural order. But transhumanism often glosses naïvely over the fact that such frameworks have historically been used to place some human beings (such as slaves) in positions of inhuman subjugation, that such injustices widely exist even today, and that the development of transhumanist technologies could easily exacerbate rather than solve such problems.[136] Thus Herbrechter positions the critical posthumanism of Hayles as being steadfastly opposed to transhumanism and its goal of achieving the radical disembodiment and dematerialization of the human intellect.[137]

Transhumanism as commercialization of the human being. Anders and Herbrechter suggest that at least some strains of transhumanism could be viewed as outgrowths of the West's hyper-commercialized culture of consumer technology. Members of society have been conditioned to covet the newest models of products – whether smartphones or televisions or automobiles – that possess the most innovative features and best specifications and are ostensibly far superior to last year's models; all 'sophisticated' and 'successful' members of society participate in a cycle of continuous product upgrades. According to this view, transhumanism laments – and is even ashamed by – the fact that the human mind and body are not a purposefully engineered consumer product that can be upgraded; through the application of biotechnologies and a reconceptualization of the nature of humanity, it seeks to transform the human being into just such a consumer product.[138] Although transhumanism envisions itself as a positive movement that seeks to exalt humanity by transcending the limits of human nature, it could thus alternatively be understood

[136] See Ferrando (2013), pp. 27-28.

[137] See Hayles (1999) and Herbrechter (2013), p. 94.

[138] See Anders, *Die Antiquiertheit des Menschen. Band 1: Über die Seele im Zeitalter der zweiten industriellen Revolution* (1992), pp. 31ff., as analyzed in Herbrechter (2013), p. 170.

as a negative movement that is embarrassed by the messy imperfections inherent in human beings' biological nature and which seeks to suppress that reality beneath a patina of technological enhancement.

Not all technologists are transhumanists. Not all (or even many) scientists, engineers, and entrepreneurs doing cutting-edge work in the fields of genetic engineering, neuroprosthetics, nanorobotics, and artificial intelligence are transhumanists; many individuals involved with developing new technologies for the engineering and augmentation of human beings are content to focus on the very concrete next steps involved with advancing the 'evolution' of humanity. For transhumanists, though, such incremental progress is a necessary but only preliminary step toward the creation of fully disembodied posthuman entities that can slip effortlessly between biological and electronic modes of being, between actual and virtual substrates.[139]

Religious aspects of transhumanism. Transhumanism frequently takes on aspects of a religious movement, formulating visions of "techno-transcendence and digital cities of god in cyberspace, of the overcoming of the flesh"; it thus cannot be understood simply from a technological perspective but also requires insights from the field of theology.[140] Some would even contend that transhumanism's conceptual origins lie in (arguably misguided) interpretations of the work of Catholic theologian Pierre Teilhard de Chardin and his idea of the 'noosphere' of shared digital information that would someday come to surround the globe.[141]

Building on Le Breton's analysis, Herbrechter suggests that from the perspective of critical posthumanism, transhumanism can be understood as a sort of 'neognostic' hatred of the body that privileges the mind over its vessel of flesh that continuously degrades and decays.[142] Such conceptual objections

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[139] See Herbrechter (2013), p. 101.

[140] Herbrechter (2013), p. 103.

[141] See Teilhard de Chardin, *Le Phénomène humain* (1955), and its discussion in Herbrechter (2013), p. 104. The revolutionary nature of Teilhard's scientific, philosophical, and theological investigations open them to many possible interpretations; his thought has frequently been appropriated by transhumanist groups that disconnect it from its ultimate grounding in the orthodox Catholic intellectual tradition and thus interpret it in ways that do not necessarily reflect its original import or context.

[142] See Le Breton, David, *L'Adieu au corps* (1999), pp. 49, 219-223, as discussed in Herbrechter (2013), pp. 96-97.

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to transhumanism, however, are very different from bioconservatives' objections regarding the expected negative real-world impacts of transhumanist projects.

C. Three Typologies of Transhumanism

There are at least three ways of classifying different forms of transhumanism: from political, objective, and instrumental perspectives.

A political typology of transhumanism. Ferrando identifies three distinct strains within transhumanism:[143]

1) **Libertarian transhumanism** argues that the free market – and not governmental oversight – can best ensure that technologies for human enhancement are efficiently and effectively developed and made accessible within human society.
2) **Democratic transhumanism** seeks to ensure – for example, by means of government regulation – that technologies for human enhancement do not simply become privileges for the powerful and wealthy but are made freely accessible to all human beings regardless of their social or economic status.
3) **Extropianism** is a movement founded by More and others that advocates the development of genetic engineering, nanotechnology, cryonics, mind uploading, and other technologies that can supposedly allow human lives to be extended indefinitely and spent in pursuit of intellectual fulfillment.

This model for categorizing transhumanisms might be understood as constituting a 'political' typology of transhumanism, as it largely distinguishes transhumanisms according to their view of the role of governments in steering the development and deployment of transhumanist technologies.

An objective typology of transhumanism. Significant variations also exist between different forms of transhumanism regarding the kinds of entities that are objects of the process of biotechnological posthumanization. Another typology can thus be formulated by classifying strains of transhumanism according to their objects:

1) **Biotransformative transhumanism** seeks to employ transformative technologies to allow *particular human beings who are already alive* to transcend the limits of human nature through manipulation or

[143] Ferrando (2013), p. 27.

augmentation of their existing biological organisms – for example, through somatic cell gene therapy, cryonics, or neuroprosthetic enhancement.

2) **Biogenerative transhumanism** seeks to purposefully design the characteristics of *future beings who have not yet been conceived or born* (e.g., through the use of germline gene therapy (GGT) or synthetic biology to engineer a new superhuman species).

3) **Mimetic transhumanism** seeks to transcend the limits of human nature by creating superior and transcendent *beings that are wholly artificial and do not represent a continuation of humanity in an organic, biological sense* but which in some conceptual sense might nevertheless be considered our 'offspring' – and perhaps even more so than can our biological offspring, insofar as they would be consciously designed by human beings to embody our highest aspirations, rather than being the non-designed products of randomized biological reproductive processes. Such beings might include artificial superintelligences, sapient robot networks, or 'uploaded' human minds that are in fact artificial replicas rather than continuations of their human models.

Herbrechter agrees with Le Breton that for the group we refer to as biotransformative transhumanists, the most relevant power relationship is not that which allows other members of society to control (or be controlled by) an individual but that which allows the individual to control his or her own body.[144] For example, Herbrechter notes that for transhumanists like Warwick, transhumanism is about a rational humanist subject making a free choice between 'good' and 'evil' (or perhaps between 'good' and 'better') and choosing the path that will result in the most happiness and independence.[145] Biotransformative transhumanism might thus be understood as a form of extreme humanism.

On the other hand, some forms of radical mimetic transhumanism seek to actively break all connections with humanistic values. Building on McLuhan's notion of the 'global electric village,' Herbrechter observes that some transhumanists see it as humanity's role (and even responsibility) to give

[144] See Herbrechter (2013), pp. 96, and its analysis of Le Breton (1999), pp. 49.

[145] Warwick's views on human enhancement can be found, e.g., in Warwick, "The Cyborg Revolution" (2014). Such perspectives are analyzed in Herbrechter (2013), p. 102.

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birth to our nonanthropic, artificially intelligent successors.[146] Similarly, drawing on Truong's analysis, Herbrechter notes that some transhumanists look forward with hope to the day when human beings will be replaced by the AIs that represent the next stage in the evolution of consciousness within our corner of the universe. It is anticipated that such artificial intelligences would eventually become fundamentally 'inhuman' as they evolve beyond the shackles created by human-like sociality, rationality, and knowledge; while 'consciousness' might thus continue to exist long after the demise of humanity, 'human-like consciousness' would not long survive the biological beings who provided its template.[147]

An instrumental typology of transhumanism. Distinctions also exist between the technologies advocated by different transhumanists for creating posthumanized entities. There are correlations between the goals held by particular transhumanists and the technologies used to pursue those goals; however, the alignment between goals and instruments is not absolute. Some transhumanists first choose the goal that they wish to accomplish and then seek to develop technologies to accomplish that goal. For them, achievement of their selected goal is paramount and the means used to achieve it are secondary and subject to change. On the other hand, some transhumanists work as scientists, engineers, entrepreneurs, ethicists, policy experts, or advocates specializing in a particular type of technology, such as artificial intelligence, neuroprosthetics, or germline gene therapy. For them, their paramount desire is discovering new avenues for improving humanity through the use of that particular technology; the specific ways in which that technology can be employed to create enhanced, transcendent, posthumanized beings are secondary. Such transhumanism can perhaps best be understood using the instrumental typology described here. For example, a scientist who specializes in developing new techniques for synthetic biology and who possesses transhumanist inclinations might pursue the use of such methods for biotransformative, biogenerative, and mimetic transhumanism, while a transhumanist researcher in the field of artificial intelligence might similarly pursue ways of applying AI to advance all three objective types of transhumanism.

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[146] Herbrechter (2013), p. 50.

[147] See Truong, Jean-Michel, *Totalement inhumaine* (2001), pp. 49, 207, as translated and analyzed in Herbrechter (2013), p. 172. See also Gladden, "The Social Robot as 'Charismatic Leader': A Phenomenology of Human Submission to Nonhuman Power" (2014).

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2. Popular (or 'Commercial') Posthumanism

Herbrechter distinguishes between "a fashionable and popular posthumanism" and a more "serious and philosophical one." Occasionally, he seems to suggest that science fiction falls within the sphere of popular and faddish posthumanism – such as when he speaks of the intimate collaboration between science fiction and the commercial film industry and notes that the importance of science fiction for posthumanism is "most visible" when science fiction is considered "in its Hollywood blockbuster incarnation."[148] However, as noted earlier, we would argue that in its best and truest form, science fiction takes its place alongside philosophical posthumanism as a form of synthetic theoretical posthumanism that seeks to deepen our understanding of future posthumanities. While we would agree that for many members of the general public, Hollywood blockbusters represent the most *visible* presentations of explicitly posthumanist themes, they are typically not the most insightful, in-depth, or coherent presentations. By focusing on Hollywood blockbusters, Herbrechter minimizes the role of other forms of science fiction (such as novels, short stories, roleplaying and computer games, manga and anime, and independent films) that present more well-thought-out and incisive analyses of posthumanist themes. We would suggest that the more popular (if not populist) and commercially oriented works of speculative fiction – such as Hollywood blockbusters – can be better understood as a form of **synthetic practical posthumanism** that is geared specifically at generating particular economic, social, or political outcomes and which we will discuss here under the title of popular (or 'commercial') posthumanism. Works of popular posthumanism are typically aimed either at generating maximum profits for their producers, influencing public opinion to create a demand for new posthumanizing technologies, or preparing the public to accept changes to daily life that are being planned by government policymakers, corporations, or other powers.

Many of the criticisms directed broadly at the world of 'science fiction' can more accurately be understood as targeting the products and methods of commercial posthumanism. In discussing Best and Kellner's analysis of posthumanism, Herbrechter notes the claim that "Economic neoliberalism, free market ideology and late capitalist individualism can no longer be sepa-

[148] Herbrechter (2013), pp. 22, 39, 107.

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rated from the various technological and cultural posthumanization processes."[149] According to that view, popular posthumanism can be seen as simply the most extreme manifestation of the link between commercial and political interests and the ongoing infusion of posthumanist themes into contemporary culture. Similarly, Herbrechter suggests that just as neuroscientists are exploring ways to exploit the plasticity of the human brain, so, too, "Global virtual hypercapitalism needs an equally plastic and flexible individual subject";[150] popular posthumanist narratives that emphasize the pliability, dissolubility, and reconfigurability of the human being support the development of subjects that are ready-made for control by corporate interests.

Indeed, Herbrechter notes the cynical argument that the apparent processes of posthuman technologization might simply be a ruse and distraction foisted cleverly on the public by the forces of neoliberal hypercapitalism that draw attention away from the "ever-increasing gap between rich and poor and the further concentration of power and capital" by subduing the masses with the hope or fear of a radically different future.[151] If such intentionally fabricated posthumanism exists, we would suggest that it takes the form not of critical or philosophical posthumanism (whose proponents are constitutionally on guard against such efforts at manipulation) but of techno-idealism, transhumanism, and the sort of commercial posthumanism described here. Indeed, Herbrechter alludes to the fact that complex, long-term, resource-intensive programs for developing new technologies for virtualization, miniaturization, surveillance, cyborgization, and artificial intelligence are being funded and led not primarily by philosophers who are interested in exploring the boundaries of human nature but by powerful commercial and governmental institutions (including banks, insurance companies, marketing firms, Internet and technology companies, and military and police organizations) that are seeking to develop such instruments for their own concrete ends. Such technologies not only give governments new tools for fighting crime and terrorism but also facilitate the invention of new forms of crime

[149] Herbrechter (2013), p. 55.

[150] Herbrechter (2013), p. 25.

[151] Herbrechter notes the substantiveness of this argument without necessarily fully endorsing it; see Herbrechter (2013), p. 23.

and terrorism (such as memory-hacking or the development of hybrid bioelectronic viruses[152]) that were never previously possible.[153]

Just as popular posthumanism can be employed as an instrument by corporations and governments to aid in their technoscientific consolidation of profits and power, so, too, can critical and sociopolitical posthumanism – with support from science fiction – play an important role in identifying these technologically facilitated efforts to gain hegemony and in developing creative new ways of conceptualizing the nature of citizenship in a posthuman world that guarantee a more democratic basis for political and economic power.[154]

E. Posthumanisms That Join the Analytic, Synthetic, Theoretical, and Practical

Hybrid posthumanisms that include strong analytic, synthetic, theoretical, and practical aspects can be understood as examples of a 'posthumanism of production' that develops a robust and rigorous theoretical framework which is then utilized to successfully generate concrete products or services within the contemporary world. At least three forms of posthumanism display hybrid traits to such an extent that it would be arbitrary to attempt to force them to fit into just one quadrant of our framework. These forms of posthumanism are the metahumanism developed by Del Val and Sorgner, sociopolitical posthumanism, and organizational posthumanism. We can consider each of these posthumanisms in turn.

1. Metahumanism as a Movement of Relational Metabodies

Ferrando cites a form of 'metahumanism' originally formulated by Del Val and Sorgner in 2010[155] and grounded in the thought of Nietzsche, Deleuze, Haraway, Hayles, and others.[156] Such metahumanism draws explicitly on such diverse fields as neuroscience, chaos theory, quantum physics, ecology, and

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[152] See Gladden, *The Handbook of Information Security for Advanced Neuroprosthetics* (2015), for a discussion of such possibilities.

[153] Herbrechter (2013), p. 190; see also Gladden, *The Handbook of Information Security for Advanced Neuroprosthetics* (2015).

[154] See Gray (2002), p. 29, and its discussion in Herbrechter (2013), p. 190.

[155] Ferrando (2013), p. 32.

[156] Del Val et al. (2011), pp. 1-2, 6-9.

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Eastern philosophy.[157] Sorgner explains that this metahumanism attempts to build on the best insights from both Anglo-American transhumanist and Continental posthumanist thought. On the one hand, metahumanism adopts critical posthumanism's "attempt to transcend dualisms" and cultivation of a "this-worldly understanding of human beings"; although, rather than assuming the materialist perspective attributed to posthumanism, metahumanism adopts an intensely relational outlook.[158] At the same time, metahumanism is compatible with the transhumanist desire to create transcendent beings. However, metahumanism holds that while it is acceptable for individuals to desire such a transformation and to pursue that goal by applying advanced biotechnologies to themselves (i.e., as a form of biotransformative transhumanism), driving the evolution of human beings into a superior species cannot be claimed to be a necessary goal for humanity as a whole – because the transhumanist ideal is only one of many aims present within the "radical plurality of concepts of the good."[159]

Sorgner positions metahumanism as an outgrowth of philosophical posthumanism rather than cultural or critical posthumanism, insofar as metahumanism's key dynamic is its focus on consistently applying a particular philosophical methodology that Sorgner describes as a 'procedural attitude' which "brings together Adorno's negative dialectics and Vattimo's radical hermeneutics such that it is a particular procedure or a method which can get applied to various discourses." This method is employed by entering into the discourses of other thinkers (such as utilitarian bioethicists) and helping them develop their own paradigms by challenging, undermining, and breaking apart those positions that they take for granted – thereby transforming their thought into something that is "more fluid and multiperspectival."[160]

Metahumanism represents a form of 'radical relationalism,' insofar as it suggests that physical or social bodies which appear to be discrete entities can instead best be understood as the effects of contingent relations (such as movement) and that such seemingly discrete bodies can be transformed by

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[157] Del Val et al. (2011), p. 9.

[158] Del Val et al. (2011), p. 2-3.

[159] Such a position has connections with both postmodernism and posthumanism. See Del Val et al. (2011), p. 3.

[160] Metahumanism thus inherently possesses a strong outward orientation that reaches out to engage thinkers who work in other disciplines and possess other perspectives. See Del Val et al. (2011), pp. 3-4.

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altering the relations in which they participate. This notion is formalized in the idea of a 'metabody,' which "is not a fixed entity but a relational body." Such metabodies are both 'metasexual' and post-anatomical.[161] Metahumanism emphasizes that "Monsters are promising strategies for performing this development away from humanism"[162] and its understanding of the human body. In the recognition that the depiction of quasi-human monsters might aid us to think about humanity in a new way, a concrete link exists between the philosophical metahumanism proposed by Del Val and Sorgner and the form of fictional metahumanism that we discussed in an earlier section.

Unlike biopolitical posthumanism, metahumanism does not have a strong future orientation; it shares with cultural and critical posthumanism the fact that "it is non-utopian, it does not see the metahuman as a future, but as a strategy in the present."[163] However, while metahumanism contains strong **analytic** aspects, it is also a form of **synthetic posthumanism**, insofar as it envisions a new kind of posthumanized being that does not yet fully exist but which is only now in the process of appearing. Likewise, metahumanism spans **theoretical** and **practical posthumanism** in that it not only seeks to better understand human nature but also to give birth to concrete new forms of artistic expression and social and political interaction. This is done partly by enacting "new strategies of resistance" to human beings' subjugation to representation and language; such strategies may take the form of "amorphous becomings" manifested through the motion of dance and other forms of artistic performance.[164]

2. Sociopolitical Posthumanism

Sociopolitical posthumanism can be understood as a form of what Herbrechter (building on Rosenau) describes as 'techno-cultural pragmatism.'[165] Sociopolitical posthumanism accepts that posthumanizing technological change is gaining in speed and intensity and – given the fact that the yearning for technological advancement is a fundamental aspect of human nature – any efforts to completely block such technologization are misguided and fu-

[161] Del Val et al. (2011), pp. 5, 14, 8.

[162] Del Val & Sorgner (2011), p. 1.

[163] Del Val et al. (2011), p. 6.

[164] Del Val himself has pioneered such forms of artistic expression. For the role of practical action in metahumanism, see Del Val et al. (2011), pp. 5-6, 12.

[165] See Herbrechter (2013), pp. 23-24, and its discussion of Rosenau (1992).

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tile. Instead, sociopolitical posthumanism seeks to steer the processes of technologization and posthumanization in a way that maximizes their positive impacts while ameliorating or avoiding their detrimental side-effects.

Sociopolitical posthumanism frequently initiates new debates among subject-matter experts and the broader public on such topics and, insofar as possible, proposes solutions. The **analytic** and **theoretical** aspects of sociopolitical posthumanism are evident when, for example, scholars explore how established definitions of a 'legal person' are challenged by an increasingly deanthropocentrized environment in which some artificially intelligent systems already display human-like decision-making capacities and fill societal roles previously restricted to human beings. The **synthetic** and **practical** aspects are manifested when scholars draw on such theoretical investigations to propose the implementation of new legislation, regulations, or financial systems not because they are needed to account for a reality that exists today but to address the activities of posthumanized beings expected to appear in the future. However, sociopolitical posthumanism differs from the synthetic practical posthumanisms of transhumanism and bioconservatism, whose adherents may manufacture theoretical frameworks to justify the pursuit or condemnation of processes of technologization that they already instinctively find appealing or repellent. For practitioners of sociopolitical posthumanism, a serious and in-depth exploration of theoretical questions is generally the starting point, and any resulting proposals for practical change emerge from a well-developed theoretical framework of the sort commonly found within philosophical or critical posthumanism.

Such sociopolitical posthumanism can be found, for example, within the field of law, where Braman argues that the traditional "assumption that the law is made by humans for humans" is no longer tenable; as the roles played by computers in society's decision-making processes grow, we are beginning to witness "a transformation in the legal system so fundamental that it may be said that we are entering a period of posthuman law."[166] Another example would be the theoretically grounded 'Cyborg Bill of Rights' proposed by Gray as an attempt to ensure that the increasing technological capacity for cy-

[166] Berman, "Posthuman Law: Information Policy and the Machinic World" (2002).

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borgization will result in beneficial new forms of posthumanized political organization and engagement and not simply the production of new military instruments.[167]

3. Organizational Posthumanism

Organizational posthumanism applies posthumanist insights and methodologies to the study and management of organizations including businesses, nonprofit organizations, schools, religious groups, professional associations, political parties, governments, and military organizations. Insofar as ongoing technological and social change is reshaping the capacities and relationality of the human beings who belong to organizations – and creating new kinds of entities like social robots that can enter into goal-directed social relationships with human beings and one another[168] – the nature of organizations is itself changing. Organizational posthumanism can aid us in making sense of and, ideally, anticipating such changes. While a scattered assortment of works by management theorists and practitioners have begun to explore the implications of posthumanism for organizational life, these investigations are still in their incipient stages;[169] the explicit formulation within this book of organizational posthumanism as an emerging discipline thus represents a novel development within the fields of posthumanism and organizational management.

Organizational posthumanism can be defined as an approach to analyzing, understanding, creating, and managing organizations that employs a post-anthropocentric and post-dualistic perspective and which recognizes that emerging technologies that complement traditional biological human beings

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[167] See Gray (2002) and the discussion of that work in Herbrechter (2013), p. 105. For a further sociopolitical posthumanist discussion of ways in which, e.g., the use of posthuman neuroprosthetic technologies could give rise to new forms of utopian or dystopian societies, see Gladden, "Utopias and Dystopias as Cybernetic Information Systems: Envisioning the Posthuman Neuropolity" (2015).

[168] See, e.g., Gladden, "The Social Robot as 'Charismatic Leader'" (2014).

[169] For examples of such works, see, e.g., Gephart, "Management, Social Issues, and the Postmodern Era" (1996); Berner, *Management in 20XX: What Will Be Important in the Future – A Holistic View* (2004); Mara & Hawk, "Posthuman rhetorics and technical communication" (2009); Barile, "From the Posthuman Consumer to the *Ontobranding* Dimension: Geolocalization, Augmented Reality and Emotional Ontology as a Radical Redefinition of What Is Real" (2013); and Gladden, "Neural Implants as Gateways to Digital-Physical Ecosystems and Posthuman Socioeconomic Interaction" (2016).

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with new kinds of intelligent actors also transform the structures, membership, dynamics, and roles available to organizations.[170] From this description, it can be seen that – like sociopolitical posthumanism and the metahumanism of Del Val and Sorgner – organizational posthumanism incorporates elements of both analytic and synthetic and both theoretical and practical posthumanism.

Analytic and synthetic elements. Organizational posthumanism is **analytic** in that it is not simply interested in imagining the radically novel forms that organizations might take ten or twenty or fifty years from now, after ongoing trends of roboticization, cyborgization, digitalization, and virtualization will have transformed organizations wholly beyond recognition; it is also interested in understanding and shaping the dynamics of organizations that exist today to the extent that they have already been affected by technological and nontechnological processes of posthumanization. Although the impact that artificial intelligence, social robotics, nanorobotics, artificial life, genetic engineering, neurocybernetics, and virtual reality have had on organizations to date is relatively small when compared to biopolitical posthumanists' visions of the sociotechnological changes that loom on the horizon, even those modest impacts already realized are transforming the ways that organizations can and must operate, rendering many previous best practices increasingly obsolete.

At the same time, organizational posthumanism is **synthetic** insofar as effective strategic management demands that organizations anticipate the contours of new phenomena that may appear in the future and understand their potential implications for an organization. For example, the frequently employed PESTLE analysis requires organizations to envision the short-, medium-, and long-term political, economic, social, technological, legal, and environmental impacts that will result either from internal organizational decisions or future changes in the organization's external ecosystem.[171] In order to anticipate such potential impacts and develop contingency plans for responding to them (or strategies to proactively shape them), organizations must attempt to project as accurately as possible the future directions of posthumanization processes and the new kinds of beings, organizational structures, interactions, physical and virtual spaces, and ecosystems that they might produce. This demands a rigorous and imaginative futurology similar

[170] For an in-depth discussion of this topic, see Part Two of this volume, "Organizational Posthumanism."

[171] See Cadle et al., *Business Analysis Techniques: 72 Essential Tools for Success* (2010), pp. 3-6.

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to that employed in philosophical posthumanism and the more thoughtful forms of science fiction.

Theoretical and practical elements. Organizational posthumanism is **theoretical** insofar as it attempts to identify and understand the manner in which organizations are being affected by existing or potential processes of posthumanization. This involves analyzing the ways in which organizations' members, structures, processes, information systems, physical and virtual spaces, and external environments are being changed through the action of supplementing or replacing their natural biological human workers with advanced AIs, social robots, neuroprosthetically augmented human beings, and other posthumanized beings. In this regard, organizational posthumanism builds on existing lines of inquiry within philosophical posthumanism. For example, Miah notes that posthumanist thought has long studied the growing fusion of human beings with the technological devices that we use to interact with one another and with our environment and to perform work-related tasks. As such tools grow increasingly sophisticated, they acquire ever subtler and more efficacious ways of liberating and empowering human beings, even as they subjugate and oppress. Much of this ambivalent dynamic results from our tools' deepening integration into the mechanisms of organizations of which we are members.[172] The theoretical component of organizational posthumanism attempts to develop coherent conceptual frameworks to explain and anticipate such phenomena.

At the same time, organizational posthumanism is also **practical** in that its goal is not simply to understand the ways in which posthuman realities are affecting organizations but also to aid management practitioners in proactively designing, creating, and maintaining organizations that can subsist within such a complex and novel competitive environment. Organizational posthumanism seeks to intentionally bring about the creation of a particular type of near-future 'posthumanity' (i.e., a world of organizations that survive as viable systems within a nonanthropocentric context of radical technological change and convergence) and to purposefully block the creation of a different type of near-future 'posthumanity' (i.e., a world of organizations that become unproductive, inefficient, unsustainable, dehumanizing, and even

[172] See Miah (2008), p. 82, and its analysis of Mazlish, *The Fourth Discontinuity: The Co-Evolution of Humans and Machines* (1993).

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dystopian as a result of their inability to deal with the emerging nonanthropocentric context).[173]

V. Conclusion

The term 'posthumanism' is employed within an increasingly wide array of contexts to describe phenomena which, in one way or another, focus on a change in the traditional understanding of the human being. Some forms of posthumanism argue that the historical definition of humanity has always been problematic, others that it is now fracturing and becoming obsolete as a result of ongoing technological change. Still other forms of posthumanism argue that our traditional understanding of the 'human' must be expanded or replaced as a next step in the development of sapient society. As we have seen, posthumanisms include such diverse phenomena as new academic disciplines, artistic and spiritual movements, research and development programs for new technologies, works of science fiction, social advocacy campaigns, and legislative lobbying efforts.

By grouping posthumanisms into a handful of basic types and clarifying the similarities and differences between them, the two-dimensional conceptual framework formulated in this text attempts to create a more orderly and comprehensive foundation for the investigation of posthumanism than has previously existed. The first type considered in detail was analytic theoretical posthumanism, which includes such fields as critical and cultural posthumanism and can be understood roughly as a *posthumanism of critique*. Synthetic theoretical posthumanism, which includes phenomena like philosophical posthumanism, science fiction, and techno-idealism, can be generally understood as a *posthumanism of imagination*. Analytic practical posthumanism, which includes various forms of metahumanism and neohumanism, can be seen as a *posthumanism of conversion* of hearts and minds. Synthetic practical posthumanism, which includes transhumanism, bioconservatism, and popular or commercial posthumanism, can be understood as a *posthumanism of control* over the actions of societies and individuals. Finally, the hybrid posthumanism that combines both analytic and synthetic as well as theoretical and practical aspects – as exemplified by the metahumanism of Sorgner

[173] In the case of, e.g., commercial enterprises and military organizations, the theory and practice of organizational posthumanism might be employed not only to maximize the efficiency and productivity of one's own posthumanized organization but also to degrade the efficiency and productivity of competing or opposing organizations, to the extent that such actions are legally and ethically permissible.

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and Del Val, sociopolitical posthumanism, and organizational posthumanism – can be understood as a *posthumanism of production*.

As posthumanist perspectives continue to be adapted and applied to new fields – such as that of organizational management – the work of developing conceptual frameworks that can coherently account for the full spectrum of posthumanisms is only beginning. It is hoped that the typology formulated in this text can contribute to such endeavors by highlighting areas of definitional ambiguity, building new conceptual bridges between different forms of posthumanism, and formulating terminological reference points that can be relied upon both by those who embrace various forms of posthumanism and those who wish to challenge the principles of posthumanist thought.

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