



9

Self-Generation

Modern persons are most fulfilled when they freely choose who to be and become in the world. In other words, they flourish best through autonomous self-generation, which is to manage one's own development and reproduction without external direction. At the individual level, people self-generate career paths, social identities, and autobiographical narratives (McAdams, 2013). Options for doing so are found in culture and community, which provide choice sets of possible selves and life courses. Similarly, groups and larger collectives self-generate through organized goal pursuit and the composition of shared narratives (Bruner, 2002). Options at this level emerge from culture, social ecology, and history. These choice sets also comprise metamodels of self-generative potentiality, that is, related sets of self-generative models. Any choice will therefore instantiate one or other agentic metamodel.

Self-generative potentiality also varies from culture to culture, between social-economic groups, and across historical periods. Regarding the past, as previous chapters explain, in premodern contexts, agentic potentiality was tightly constrained. Metamodels of agency were relatively fixed and stable and provided few degrees of self-generative freedom. For most people in premodernity, life was dominated by tradition and templates for

survival. Living a good life meant having physical security, food and shelter, family continuity, and the replication of communal rituals and norms. Similar principles are applied at the collective level. Social organization was stable and patriarchal. Collective self-generation referenced embedded norms and established orders. Indeed, these are the core features of the replicative, agentic metamodel which dominated during premodernity.

By contrast, during the modern era, self-generative potentiality expanded greatly, at least for many. As capabilities and endowments increased, people enjoyed greater degrees of freedom and choice, to develop as autonomous, self-efficacious agents. In many societies, cultural norms have shifted in the same direction, to encourage personal ambition and mobility. Reflecting such freedom, the modern period is characterized by self-generative possibility. It aspires to liberate human potential, transcending the premodern focus on survival and fate. Modernity tells a story of progress, reasoning mind, scientific discovery, and innovation, all dedicated to the “social conquest of earth” (Wilson, 2012). And to be sure, progressive social policies and economic growth have expanded self-generative capability and potentiality. Technological innovation, improvements in education, public health, participatory government, and free market economies have combined to lift many (though not all) from historic deprivation and ignorance. For example, the career path of entrepreneurship is now a well-established option in contemporary societies (McAdams, 2006). It incorporates values of autonomy and exploration, a preference for risk-taking, creativity, and organized goal pursuit—all qualities which exemplify the adaptive, agentic metamodel of modernity. Production and consumption have also grown, leading to a predictable emphasis on the acquisition of goods and services, and the enjoyment of their utility.

Nevertheless, self-generation often falls short of aspirations, owing to enduring constraints and deficits. To begin with, options remain limited for many. Survival may be the best a person or community can hope for. What is more, self-generation can also disappoint in relatively abundant environments. Even if better, more varied self-generative options emerge, they might prove difficult to realize, because agents are incapable of choice and lack conversion capabilities, being the capabilities required to exploit the opportunities one has (Sen, 2000). Hence, owing to

increasing complexity and limited capabilities, people neither discriminate between options nor convert them into reality. The expansion of potentiality overwhelms them. In these situations, many rely on social docility instead. They adopt the career and life path recommended by their community or family. Although that said, this kind of docility is often satisfying, especially in relatively munificent societies. Living a standard life in a plentiful world can be fulfilling enough.

Contemporary digitalization amplifies these opportunities and challenges. For example, at the individual level, digitalization provides new ways for people to curate and share memories, form new relationships, and choose alternative identities and futures. Digitalization also creates fresh opportunities at the collective level, to organize, collaborate, pursue common goals, and compose new narratives. Artificial agency points in the same direction. Particularly, today's most advanced systems are fully self-generative and globally connected. In these respects, human and artificial agents are increasingly compatible, as intelligent self-generative agents. A pluralistic world of augmented potentiality is fast emerging. However, at the same time, digitalization amplifies the dilemmas of munificence described earlier. Presented with a rapidly expanding range of self-generative options, many are unprepared, resistant, or overwhelmed, by the range and complexity of choice. They resist, delay, or retreat from digitalized, self-generative options (see Kozyreva et al., 2020).

Ironically, therefore, and in contrast to earlier periods, digitally augmented self-generation may disappoint because of too many opportunities and resources, rather than too few. To be sure, self-generative potentiality will increase, but if human capabilities lag, the freedom to choose will decline. In fact, recent studies report such effects (e.g., Scott et al., 2017). They show that digitally augmented self-generation can skew toward such extremes. People might resist digitalization on some dimensions, feel blocked and incapable in other ways, or retreat to their priors, while others surrender to digital determination (Collins, 2018). For example, in curating an online persona, some people deliberately avoid information about alternative life choices, yet struggle to search the sources they trust, and therefore rely on artificial agents to determine their choices. In this fashion, digital augmentation might narrow and distort self-generation.

9.1 Self-Generative Dilemmas

In fact, self-generative trade-offs are the norm. All agents compromise to some degree, as they balance self-generative freedom with the need for coherence and control (Bandura, 1997; Schwartz, 2000). One common strategy is to limit the range of options under consideration. As I explained earlier, people often simplify choice by relying on docility within the social world (Ryan & Deci, 2006). They defer to culture and convention, rather than autonomous reflection, when making self-generative choices. They adopt myopic life paths and focus on singular domains of being and doing. To be sure, myopia and social docility simplify choice (Bargh & Williams, 2006). Myopic choices are typically clear and predictable. And docility allows people to find psychosocial meaning and continuity within culture (McAdams, 2001). They choose from a preexisting set of possible futures, confident in their meaning and feasibility. By choosing mimetic life paths, therefore, agents can self-generate with a modest sense of autonomy, while securing coherence and consistency.

Sources of Disturbance

However, self-generative coherence is easily disturbed, especially if the choice set suddenly contracts or expands. Regarding the contraction of choice, a sudden loss of resources or social order will reduce the range of self-generative options. Disease, social disorder, or economic depression may strike, and sometimes all three, as in times of global pandemic. When such events occur, there are fewer opportunities and degrees of freedom for self-generation. Potentiality shrinks and lives are disrupted. In contrast, regarding the sudden expansion of choice, a rapid increase in resources, capabilities, or endowments will enhance options for self-generation. For example, a person may unexpectedly inherit a fortune, or be transported to an abundant environment, or gain access to extraordinary knowledge and capabilities. Similarly, a community might discover vast, untapped resources. Self-generative choice sets rapidly expand.

However, plentiful choice is unusual and presents different challenges. As stated above, some agents struggle to appreciate an expanded range of possibilities and find it hard to discriminate and order preferences. And even if they can choose, they may fail to realize their choice, owing to inadequate conversion capabilities and lack of requisite resources, especially when self-generative options are novel and complex. Hence, people are myopic and simplify choice. They make singular, predictable life choices. Opportunities are missed, and sometimes intentionally avoided (Bandura, 2006). In any case, self-generative abundance is exceptional. For most individuals and communities, the opposite is true. They endure deprivation as a permanent condition and have few self-generative options at the best of times (Sen, 2000). Not surprisingly, therefore, the dilemmas of munificence are rarely studied, apart from some fictional accounts (e.g., Forster, 1928; Huxley, 1998), and almost never treated as problematic. Rather, scholarly attention rightly focuses on persistent limitations and deprivation.

Digital Augmentation of Self-Generation

Digitalization promises a qualitative shift in this regard. Quite simply, it affords more options for being, doing, and becoming. By leveraging digitalized capabilities, augmented agents will be able to combine different modes of action and becoming, self-generating dynamically in real time. Consider clinical medicine once again. In this domain, augmented human-machine agents (clinicians and computers) will combine empathy and personality, associative and speculative analysis, clinical expertise and robotic capability, plus predictive scenario modeling, all simultaneously in real time. Working together, they will take patient care to a new level. In this fashion, digitalization will enable more dynamic, flexible self-generation by clinicians, as people and professionals. More generally, it will allow augmented agents to function effectively across multiple modes of being and doing (see Chen & Dalmau, 2005), that is, to collaborate in ambidextrous self-generation.

Digitalization therefore continues the narrative of modernity, toward richer self-generative capability and potentiality, but now at great scale and speed (Bandura, 2015). In fact, the digital augmentation of

self-generation will constitute a historic transformation, at least for many, toward self-generative abundance and ambidexterity, in contrast to historic patterns of limited, singular modes of activity and self-generation. Already, digital networks allow people to adopt new modes of action and compose alternative narratives within virtual worlds. Similarly, online communities proliferate, while digital platforms support innovative social and organizational forms (Baldwin, 2012). Moreover, future innovations will accelerate these trends. Even at the bottom of the socioeconomic pyramid, digitalization allows a growing number of people to aspire to forms of life and action which were previously inconceivable (Mbuyisa & Leonard, 2017).

Nevertheless, as noted earlier, some people will retreat, resist, feel blocked, or simply be incapable of embracing new possibilities. Indeed, most people are poor at combining new and different modes of action. For example, many cannot synthesize associative and calculative intelligence, nor can they combine creativity and computation (see Malik et al., 2017). Similarly, they struggle to absorb alternative modes of being and doing in social life. Most people are not ambidextrous in these respects. In fact, this limitation is reflected in the classic metamodel of industrial modernity: the strict division of labor, singular domains of training and efficacy, and path-dependent careers. For this reason, contemporary educational and training programs try to develop ambidextrous capabilities, especially in managing opportunity and innovation (O'Reilly & Tushman, 2013).

Other people will retreat or resist the digital augmentation of self-generation, especially those who are deeply committed to cultural traditions or have inflexible assumptions about the ideal self. For these people, digital augmentation will not expand self-generative potentiality. It will reinforce myopic priors instead. For example, studies document the proliferation of online xenophobia against alternative life choices (Chetty & Alathur, 2018). At the opposite extreme, some people could overly relax and abandon their prior commitments. Instead of maintaining cultural norms and values, and seeking to own their own choices, they may surrender to artificial control and become digitally docile. Their domains of action, even careers and life paths, will be determined by artificial sources. Risks therefore emerge at every extreme. Neither retreat, resistance,

blockage, nor surrender are effective responses to the digital augmentation of self-generation.

Dilemmas of Augmentation

New dilemmas thus emerge for augmented agents, as they seek to self-generate. On the one hand, artificial agents are increasingly self-generative, able to combine different modes of action and intelligence in real time, far beyond the reach of human capabilities and consciousness. While on the other hand, humans are typically sluggish and myopic in self-generation and tend toward singular modes of being and doing. Therefore, when human and artificial agents collaborate as augmented agents, they bring different self-generative strengths and weaknesses. If poorly supervised, the combined system could be singular and path dependent in human respects, but variable and dynamic in artificial terms. This will result in divergent, distorted patterns of self-generative ambidexterity. Agents will combine singular, exploitative modes of human self-generation, with flexible, exploratory modes of artificial self-generation. Alternatively, one agent might dominate the other and self-generation is highly convergent, for example, when people surrender to artificial determination.

This presents another supervisory challenge for augmented agents. They must find an appropriate ambidextrous balance, that is, combining human and artificial modes of self-generation to maximize metamodel fit. If supervision is poor, however, the result will be dysfunctional divergence or convergence. Consider the following example. Assume that some years ago, a woman or man trained to be a schoolteacher and learned traditional pedagogical methods. A predictable life course lay ahead. However, more recently, rapid digitalization, pandemic risks, and other social developments, require the teacher to master digitally augmented techniques and tools. In other words, the teacher must now collaborate in ambidextrous self-generation. However, she or he may resist or feel blocked, and default to prior knowledge and procedures. The risk, therefore, is that human and artificial self-generation will be divergent and dysfunctional. Digitally augmented self-generation would be a

distorted form of ambidexterity, in which both agents are likely to obstruct each other. In fact, recent studies show that this is already happening (e.g., Salmela-Aro et al., 2019).

These dilemmas suggest a major shift in the problematics of self-generation. As noted above, modern scholarship rightly focuses on the persistent deprivations and limitations which constrain self-generation (Sen, 2017a). However, in a highly digitalized world, the problematics of self-generation expand. In addition to overcoming limits and deprivation, humanity must learn to appreciate and absorb digitally augmented potentiality. Lifelong learning and self-regeneration will become the norm. New questions therefore arise: how can human and artificial agents collaborate in dynamic self-generation, learning to be jointly ambidextrous in this regard, while ensuring human coherence and continuity; and what will count as well-being and flourishing, in a digitally augmented world?

Summary of Augmented Self-Generation

In summary, whether for good or ill, digitalization is transforming established patterns of self-generation. On the one hand, artificial self-generation is increasingly exploratory and autonomous, as artificial agents compose and recompose themselves. By incorporating these capabilities, augmented agents will be capable of multiple modes of being, doing, and becoming. They will be ambidextrous in this regard, combining both human and artificial modes of self-generation. On the other hand, however, human agents naturally possess limited capabilities and often remain committed to exploiting singular narratives and traditional life paths. They are persistently non-ambidextrous, unless trained to be otherwise. When both types of agent combine in augmented agency, the result could be self-generative divergence or convergence. Regarding divergence, human self-generative functioning will combine and conflict with artificial functioning (e.g., Levy, 2018). And regarding convergence, some people will either overtake or surrender to artificial self-generation. The digital augmentation of self-generation therefore focuses this book's core question: how to be and remain agentic in a digitalized world? The challenge is to supervise self-generation in ways which exploit new capabilities and potentialities, while respecting human choices and commitments.

9.2 Illustrations of Self-Generation

The preceding argument identifies the following principles. Human and artificial agents are situated, complex, open, and adaptive systems. Both exhibit varying degrees of self-generative capability and potentiality. However, humans have limited capability to discriminate, choose, and explore new self-generative options. Instead, they often exploit singular and predictable modes of self-generation, while artificial agents are increasingly dynamic and exploratory. In consequence, many humans will retreat, resist, feel blocked, or simply surrender, in response to the digital augmentation of self-generation. In these situations, digitalization will produce distorted forms of self-generative ambidexterity. Assuming these principles, the following sections illustrate major scenarios of self-generation, including the new patterns emerging in today's augmented world. The first illustration shows the baseline of modernity.

Self-Generation in Modernity

As earlier sections explain, modernity aspires to develop autonomous reasoning persons who can self-generate their own life path. Contemporary educational and behavioral interventions exemplify these aspirations, as do modern institutions and organizations (Scott, 2004). Figure 9.1 illustrates the self-generative metamodels within such a world. The figure focuses on the core challenge discussed in the previous section, namely, the capability of agents to discriminate and choose between self-generative options—the major risk being that people discriminate poorly, often resist or surrender, and fail to maximize choice. To capture these effects, the figure compares the complexity of self-generative metamodels to the degree of discriminate ranking between them. The figure further assumes capabilities at level L_2 , with a moderate level of technological assistance. It also assumes that the more complex the self-generative choice set, or metamodel of self-generation, the less discriminated it is likely to be, and vice versa.

The figure then depicts four metamodels of self-generative choice. Quadrant 1 combines complex self-generative models, with highly discriminate ranking of them. This implies that agents can make a best

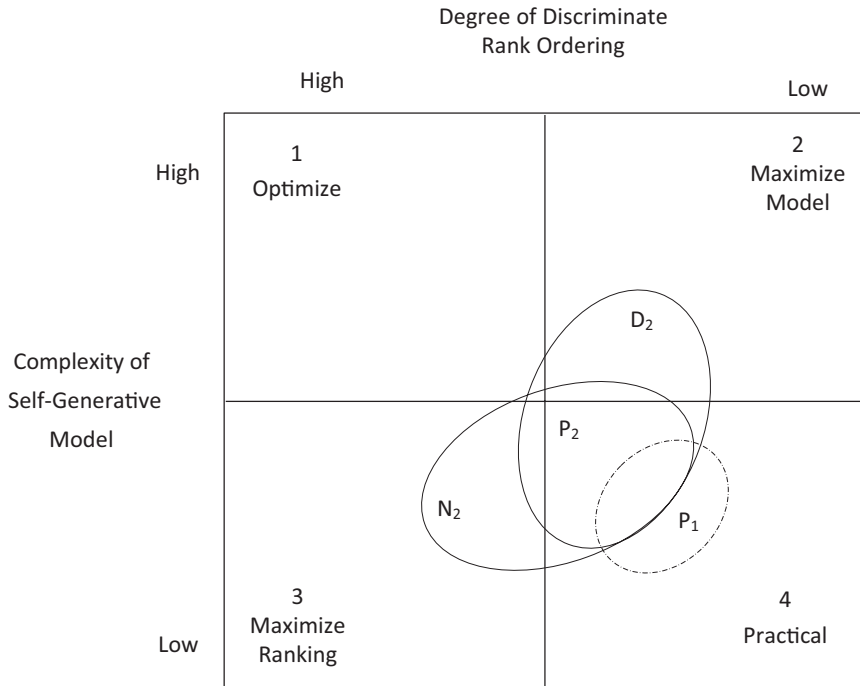


Fig. 9.1 Modern self-generation

choice about a complex model. Hence, these choices are optimizing. But they demand strong ambidextrous, self-generative capabilities, which enable agents to discriminate and combine multiple, complex options. Second, quadrant 2 combines complex self-generative models, with less discriminate ranking. Such choices will be maximizing. Agents will incompletely rank complex options and choose one which is no worse than alternatives. This scenario assumes moderate ambidextrous capabilities and is more feasible in this respect. Indeed, it accords with observed reality: people often choose no worse versions of complex life paths—for example, adopting an entrepreneurial career, in which options are complex and hard to rank. Next, quadrant 3 combines less complex self-generative models with highly discriminate ranking of them. Such choices will also be maximizing, owing to the almost complete rank ordering of less complex options. This metamodel also assumes moderate ambidextrous capabilities. And once again, it accords with observation: many

people choose the best version of a simpler life path, for example, striving to achieve elite career status in a highly regulated community or profession. Finally, quadrant 4 combines less complex self-generative models with less discriminate ranking. These choices will be practical, meaning they are feasible and likely to succeed, and adequate for being a self-generative agent in the world. Not surprisingly, this metamodel assumes lesser capabilities and is therefore very feasible. Arguably, many individuals and collectives exhibit this type of self-generation: choosing a no worse version of a simpler life path. Making routine, mimetic choices in a modern world and being adequately fulfilled by doing so.

Figure 9.1 also shows further details. Different metamodels of self-generation, or model choice sets, are shown by the oval shapes N_2 , D_2 , and P_2 . First, it is important to note, that these metamodels do not encompass much of the optimizing quadrant 1. Such choices are ideal and inspirational, but difficult to rank and realize, owing to their extreme complexity and the required level of discrimination. Second, N_2 is primarily overlapping quadrant 3, which combines simplified models, with highly discriminate ranking of them. These options will be maximizing, with respect to the complete ordering of simplified, self-generative models. This metamodel therefore assumes moderate capabilities, at best. It is also more normative and calculative, for example, by planning to achieve elite status within a regulated community or profession. Hence, the symbol N is employed. Third, the metamodel D_2 is primarily overlapping quadrant 2, which combines complex self-generative models, with partial, less discriminate ranking. It also assumes moderate capabilities. These options are maximizing, with respect to the incomplete rank ordering of complex models. Hence, the symbol D is used, and the self-generative options in D_2 are more descriptive, intuitive, associative, and harder to discriminate—for example, choosing an entrepreneurial career and life path. And fourth, the metamodel P_2 largely overlaps quadrant 4, which illustrates a practical self-generated life in the modern world, following a narrow, routine path with modest expectations or aspirations, which is adequate, feasible, and hence the most frequent choice.

Note that the figure also shows another scenario labeled P_1 . This indicates the practical self-generative choices of a premodern world. Clearly, P_1 is even less complex and discriminated than P_2 , and P_2 only partly

overlaps P_1 . This illustrates the fact that much of self-generative practicality in the premodern world is insufficient for modernity. For example, a peasant life may be practical and adequate in premodernity, but inadequate and dissatisfying during modernity. By the same token, much of self-generative practicality in modernity would be exceptional during premodernity. For example, social and economic mobility are widely viewed as feasible and adequate in modern societies but were exceptional and elite in premodern times.

Furthermore, the metamodels N_2 and D_2 are significantly distinct, shown by their small overlap with P_2 . Self-generation in the modern world is dualistic, in this regard, and therefore agents must be efficacious in different types of choice, often at the same time, if they hope to embrace both. In other words, they must be ambidextrous, learning to explore and exploit different life paths simultaneously (see Kahneman, 2011). For example, imagine living a typical family life, striving to optimize stability and continuity, while pursuing a highly creative, risky entrepreneurial career. In such a life, integration and coherence are not guaranteed. To manage these dilemmas, modern agents must develop ambidextrous efficacies across diverse modes of being, doing, and becoming.

Divergent Augmented Self-Generation

Now consider the digitally augmented world, in which self-generative capabilities and potentialities are greatly enhanced. Central features include the collaboration of human and artificial agents in systems of augmented agency; highly creative, compositive methods of self-generation; and rapid learning, both intra-cyclical and inter-cyclical. In fact, augmented agents will have the capability to compose and update self-generative models during life phases, and potentially in real time. However, as I explained earlier, despite rapidly expanding capabilities and potentialities, many people will be slow to absorb these developments. Some will be resistant, retreat, feel blocked, or simply surrender. Figure 9.2 illustrates this type of digitally augmented self-generation. Similar as the previous figure, Fig. 9.2 shows the complexity of self-generative models

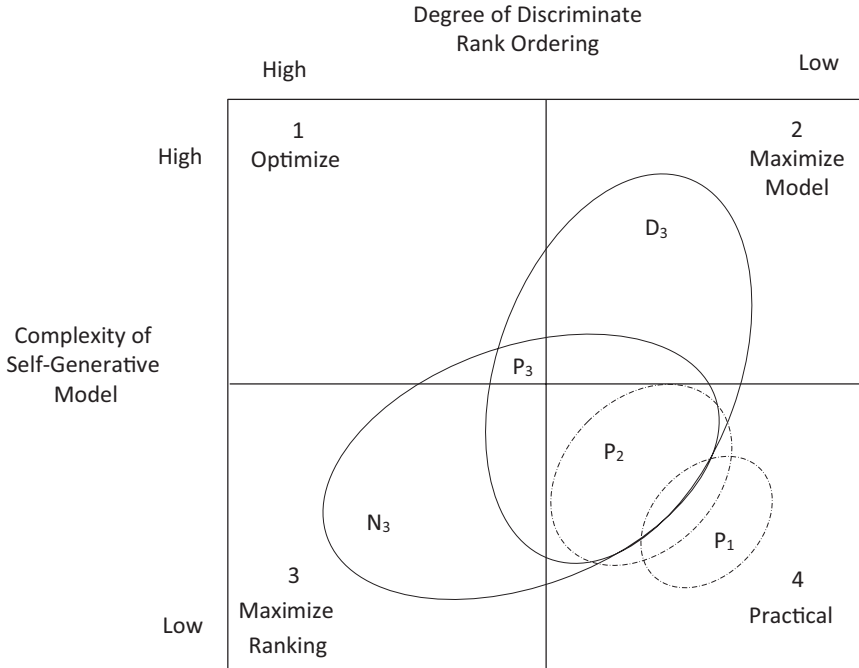


Fig. 9.2 Distorted augmented self-generation

on the vertical axis, from low to high, and the degree of discriminate ranking on the horizontal axis, also from low to high. Being digitally augmented, the figure assumes that capabilities have significantly expanded to L_3 , compared to the previous figure. Four quadrants then distinguish the same broad options as the preceding figure.

Next, the figure shows different metamodels or model choice sets. First, consider the oval shapes N_3 , D_3 , and P_3 . The shape P_3 primarily overlaps the practical choice in segment 4. Hence, P_3 illustrates the minimal type of self-generation required, to live a practical life in a digitalized world. The figure also shows P_3 partially overlaps the earlier metamodels of this kind. It overlaps a small portion of P_1 and more of P_2 . This indicates that practical self-generation in a digitalized world transcends the minimal standards of modern and premodern scenarios. Although, a limited number of premodern options may continue, perhaps cultural or

religious life choices, and a good portion of modern options as well. However, significant aspects of self-generative normality in the digitalized world will be exceptional, relative to earlier periods. For example, thanks to digitalization, global connection and collaboration are standard features of self-generation for many people today, but these attributes were exceptional and elite during much of modernity and would be signs of divinity in premodern societies.

Furthermore, the metamodels N_3 and D_3 are very distinct, shown by their relatively minor overlap with each other and P_3 . Self-generation is therefore highly divergent. The scenarios are skewed toward distorted forms of ambidexterity. In fact, this suggests opposing human and artificial self-generative processes, and self-generation is highly dualistic. Such dualism was less problematic in earlier modern contexts, which are more forgiving in these respects. However, in highly digitalized contexts, extreme self-generative divergence is more likely. There is a significant risk that self-generation will exhibit ambidextrous distortion. Figure 9.2 depicts exactly this. And in such cases, there is a high risk of psychosocial incoherence for personalities, groups, and collectives. Effective supervision will be critical to avoid such extremes.

Convergent Augmented Self-Generation

In other digitalized contexts, augmented agents will be more balanced and maximize metamodel fit. Artificial agents will be empathic and support humans to choose and pursue richer life paths. Human agents will then enjoy more fulfilling, self-generative choices. However, to achieve this, both types of agent need to take significant steps. First, human agents will have to relax some traditional commitments, including fixed narratives, and embrace lifelong learning. Second, artificial agents will have to develop genuine empathy for human needs and aspirations, while resisting distorting myopia and bias. If human and artificial agents can achieve this type of ambidextrous collaboration, the universe of self-generative potentiality will expand dramatically. Figure 9.3 illustrates this type of balanced self-generation by augmented agents.

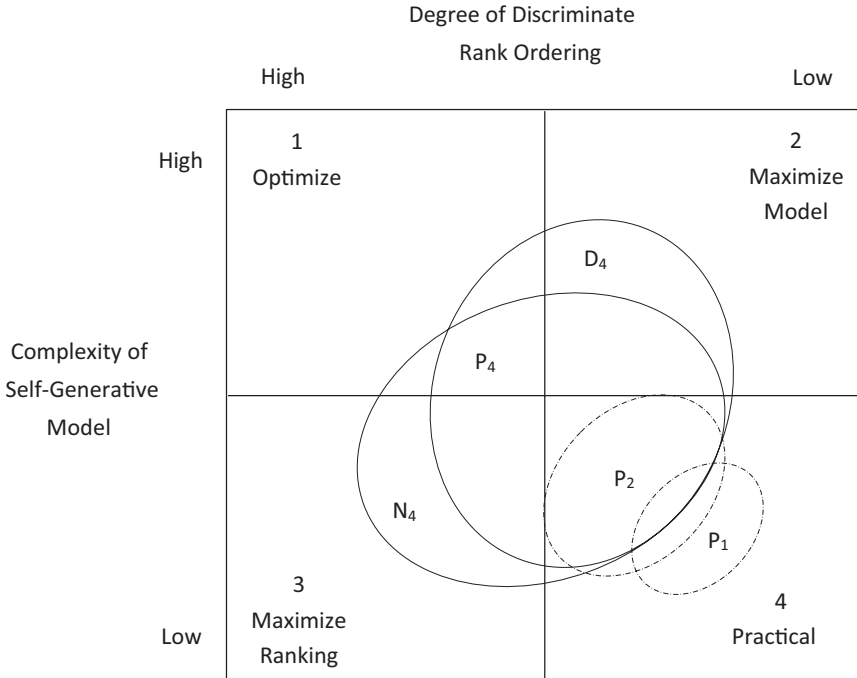


Fig. 9.3 Balanced augmented self-generation

Once again, the figure shows the complexity of models on the vertical axis and the degree of discriminate ranking on the horizontal axis. The four quadrants show the same general choice options as the preceding two figures. The notable change is that the metamodels labeled N_4 , D_4 , and P_4 are more convergent when compared to the divergent set in the preceding figure. All three metamodels now overlap to significant degree. This illustrates the fact that in this scenario, human and artificial self-generation are broadly convergent, rather than divergent. The augmented agent exhibits strong ambidextrous capabilities.

In contrast to the preceding figure, therefore, N_4 and D_4 are more convergent, although they retain modest distinction. They do not fully overlap, which shows that self-generation is not fully digitalized. Significant degrees of freedom remain, allowing space for human intuition and imagination as well as purely artificial self-generation in D_4 and N_4 .

Hence, these metamodels are less polarized and dualistic, and more continuous and pluralistic. They synthesize human and artificial self-generation in a balanced, ambidextrous fashion. Finally, the practical metamodel P_4 overlaps prior scenarios, but is larger than both P_2 and P_3 . What was exceptional or impossible, even in the recent digital past, is now practical and feasible. In summary, the metamodels in Fig. 9.3 achieve strong fit and largely mitigate the risk of psychosocial incoherence. Agents enjoy the benefits of augmented self-generation.

9.3 Implications for Human Flourishing

Throughout recorded history, including the recent past, self-generative options have been strictly limited for most individuals and communities. Choices have been few, owing to limited capabilities, resources, and opportunities. Hence, the dominant concern for modern scholars, policy makers, and practitioners is to empower self-generation by overcoming deficits, growing endowments, and providing opportunities to learn and develop—the ultimate goal being to expand well-being and the prospects for human flourishing (Sen, 2017b). In the contemporary world, digitalization raises additional concerns, for it promises unprecedented self-generative capabilities and potentialities. New opportunities and risks emerge for digitally augmented self-generation.

Self-Generative Risks

First, some people will retreat or actively resist the digital augmentation of self-regulation. These people might be deeply committed to priors about well-being and what counts as a good life, often grounded in cultural traditions. For these people, new versions of the self and alternative narratives will be threatening, seen as a source of disturbance and deviance. Hence, these people will fight back and resist, or flee from digitalization to established life choices. We already see evidence of this among groups which are dedicated to traditional values and norms. Though their resistance is not inherently mistaken or destructive, because it can

reflect sincerely held values and commitments which are genuinely at risk. However, to retreat or resist means that these groups will not enjoy the potential benefits of digitally augmented self-generation.

Second, poor supervision could also lead to a sense of blockage and existential floundering. Many people are not prepared for a rapid increase in self-generative capabilities and potentialities. Older generations and cultures, especially, are accustomed to slow self-generative cycles, stretching across autobiographical life phases (Conway & Pleydell-Pearce, 2000). At the same time, they may have deeply encoded assumptions about well-being and what counts as a good life. Therefore, they may use digitally augmented capabilities to reinforce myopic priors about the self and world. But such outcomes will be deeply ironic. These agents will enjoy greater self-generative potentiality yet fail to exploit and convert these opportunities. In this sense, augmented self-generation would lead to existential floundering: agents will have more plentiful, varied self-generative options, but they will be incapable of preferential choice. Instead of flourishing, they will feel blocked and flounder.

Third, there is an equal risk of existential floating if people overly relax or abandon prior commitments. To begin with, human beings are naturally sociable and docile and often refer to others when making life and career choices. If they are overly docile to artificial influence, however, these systems might take control. This leads to another ironic outcome. Digital augmentation will enhance self-generative potentiality, but may ultimately reduce freedom, if it encourages docility and dependence. Even worse, these effects could be deliberately engineered by powerful actors, as a means of social domination. Evidence suggests that some are attempting this already (Helbing et al., 2019). They encourage and reward digital docility, while penalizing autonomy. In these ways, whether by default or design, augmented self-generation may result in existential floating. People would disengage from autonomous choice, and drift on a rising tide of perceived well-being. Many could also develop a false sense of self-efficacy. But in reality, the locus of self-generative control would shift, away from human and toward artificial sources (Stoycheff et al., 2018). Recognizing this risk, some psychologists are investigating ways to maintain agentic autonomy in digitalized contexts, through the development of self-regulatory skills, the deliberate avoidance of some

digital influences, and boosting resilience against manipulation (Kozyreva et al., 2020). In fact, this research illustrates the positive supervision of digitally augmented self-generation.

Social and Behavioral Theories

Agentic self-generation also plays a central role in numerous social and behavioral theories. For example, it has major implications for psychosocial development and biographical decision-making (Bandura, 2006). Collective self-generation is equally important for institutions and organizations. Indeed, collectives can be defined in terms of their self-generative characteristics: goal oriented and purposive, with identities and aspirations, organizing to achieve goals and grow over time (Bandura, 2001; Scott & Davis, 2007). Self-generation is also widely viewed as a necessary precondition of human freedom and flourishing, and increasingly for employee engagement (Sen, 2000). However, as already noted, most prior research has focused on limitations and obstacles to freedom and flourishing. Moving forward, theories will also need to accommodate the digitalized expansion of capabilities and potentialities. The novel problem is having too much, rather than too little. Fresh problematics thus emerge: how to integrate artificial agents into human self-generation, without falling into retreat, resistance, blockage, or surrender; and how to enhance human flourishing through digital augmentation while preserving core human values and commitments.

Furthermore, most self-generative choices reflect cultural narratives of meaning and value. As Nelson Goodman (1978) explains, communities join together in cultural worldmaking and people's lives unfold within these worlds. In his conception, worldmaking captures the essence of cultural community, including its categories of perceived reality, value, truth, and beauty, which are typically expressed in language, faith, art, and scholarship. Goodman further explains that worldmaking "always starts from worlds already at hand; the making is a remaking" (*ibid.*, p. 6). Like other expressions of self-generation, cultural worldmaking inherits and recomposes. Indeed, he writes that worldmaking emerges through "composition and decomposition and weighting of wholes and

kinds” (ibid., p. 14). In premodern times, such worldmaking was through shared myth and storytelling. Agentic transformation in this world was a heroic exception. Whereas during modernity, agentic self-transformation is possible for everyone, thanks to education, enlightened reasoning, social progress, and scientific discovery.

Extending this line of thought, digitally augmented worldmaking promises increasingly dynamic self-generation. Indeed, newly made worlds are proliferating, in online communities and networks, which augment cultural systems of value and meaning. Some are enriching, although many are not. In fact, poorly supervised worldmaking leads to cultural imbalance and distortion. It produces what Goodman calls “conflicting versions of worlds in the making,” which undermine cultural coherence. And to be sure, digitalization is no cultural panacea. In fact, it is possible that digitalization—seen in the context of ongoing industrialization and environmental exploitation—will perpetuate unsustainable practices and degrade collective well-being. In these respects, digital augmentation is part of a larger challenge: how to enhance shared meaning and value through collective self-generation, making worlds which are fit, fair, and sustainable for all?

As partners in augmented agency, therefore, human agents can hope for a world which offers better life choices, richer communal narratives, and new cultural experiences. However, to make such a world, human and artificial agents must learn to appreciate and choose maximizing options. They must also develop strong ambidextrous, self-generative capabilities. In the past, this type of self-generation was reserved for the gods and superhuman heroes (see Nietzsche, 1966). Within a highly digitalized world, however, augmented self-generation will empower all persons and communities, at least potentially, to transcend predetermined life choices and fixed narratives, and travel more open, fulfilling paths.

Human self-generation therefore strives to transcend limits, but almost never succeeds. Trade-offs are common: between the desire for freedom and effective control; between being and doing in the present, and future becoming; between individual autonomy and collective solidarity; and between the risk of loss and hope for gain. Against this backdrop, digital

augmentation is transforming self-generative capabilities and potentialities. Historic patterns of limitation and deprivation are complemented by new sources of empowerment and possibility. Digitally augmented ambidextrous capabilities are now feasible for all. But this gives rise to novel dilemmas. On the positive side, if augmented self-generation is well supervised, the outcomes will be liberating and enriching. Human agents will enjoy unprecedented self-generative potentiality on a global scale. On the negative side, however, if augmented self-generation is poorly supervised, it could reduce the prospects for human flourishing. People might retreat, resist, feel blocked, or surrender. They could flee augmented self-generation, by fighting back, floundering, or floating, rather than flourishing.

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