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Digital Leader-Followership for the Digital Age: A North American Perspective

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Abstract

This chapter examines the emerging literature on contemporary leadership, particularly *leadership in the digital age*, *digital leadership*, *e-leadership*, and *cyber leadership*, in the context of socio-cultural changes, theoretical shifts in leadership studies, and leadership education changes observed in the United States in the last two decades. Although the above literature shows a shift from leader-centered and hierarchical to follower-centered and relational leadership, it is not clear how the old may yield to the new paradigm of leadership. There seem to be no discussion in the leadership literature on how to transition from pre-digital to digital era of leadership. While this study acknowledges the discontinuity and tension between the contemporary and the traditional leadership approaches, it offers theoretical and practical alternatives for transitioning from traditional to contemporary leadership in the digital age. Since leadership research has already shifted from single-role identity to multiple-role identities, which enables individuals to acquire and master both leading and following skills in today's organizations, this study is optimistic that the *leader-follower trade* (LFT) or similar approaches may build bridges between digital native and digital immigrant generations of leader-followers for a smoother transition from hierarchical to distributed, shared, collective, and adaptive leadership for the digital age.

Keywords: leader-followership, digital leadership, virtual organizations, digital natives, digital immigrants

1. Introduction

The twenty-first century marks the beginning of an unprecedented, fast-paced technological revolution of digitization. As a result, today's digital followers, leaders, and ordinary citizens possess instant access to a vast amount of information, and there has been greater dissemination of knowledge than ever before. Furthermore, as information technology has opened up new opportunities for sharing knowledge, information, and work responsibilities, most traditional, hierarchical leadership theories and models have become outdated and irrelevant because they were not designed for the digital age. As artificial intelligent technologies and tools replace traditional managerial positions in organizations, and as company workers become increasingly engaged in multiple leading and following roles in today's virtual organizations, there is a greater need for new models of leading and following in the virtual space, where participants may acquire different types of leading and following competencies that are more relevant for the digital age.

The emerging literature on leadership for the digital era can be categorized as leadership in the digital age, digital leadership, e-leadership, and cyber leadership. *Leadership in the digital age* deals with the consequences of the digitization on leadership conceptualization and practice in the virtual space. *Digital leadership* as a relational, fluid, spontaneous, and role-based leadership redefines leadership behavior and practice through the use of digital tools in the virtual world. *E-leadership*, as the traditional leadership, faces similar issues of vision, motivation, and direction to overcome challenges of social influence processes through advanced information technology (AIT) in the areas of communication, trust, and relationships between leaders and followers in virtual organizations. Lastly, *cyber leadership*, a digital version of military leadership, deals with complex and multifaceted issues of organizational safety and security such as information warfare, cyber-security threats, and cyber-attacks.

The above-mentioned literature on digital leadership shows a clear departure from the leadership paradigm established by Baby Boomers after World War II.¹ Since then, major cultural and generational changes have taken place in the areas of communication, relationships, and attitudes toward leadership, authority, and corporate loyalty [1]. The value and the philosophy of work have changed from working hard and making a profit at any cost (Boomers and Gen Xers) to working for personal satisfaction and for individual and environmental well-being (Millennials and Gen Zers). Additionally, the current research on leadership has moved from leader-centered to follower-inclusive and leader-follower relational models of leadership [2]. Nowadays, leadership education and training resources are no longer solely the privilege of company managers and leaders. More than 1570 leadership degree programs exist worldwide, most of which are in colleges and universities in the United States, that offer leadership certification and associate, bachelor's, master's, and doctoral degree programs [3]. As a result, the traditional understanding of positional leaders and followers in organizations has become blurrier and irrelevant for the contemporary leadership in the digital age because the latter is spontaneous and organic while the former is rigid and static.

However, the above-mentioned literature on digital leadership does not offer mechanisms for bridging the socio-cultural, theoretical, philosophical, and generational gaps that exist today between Boomers and Millennials. Nor does it propose plans for transition from the traditional theories and practices of leadership to contemporary leader-follower processes in the age of information and technology. The following questions are worth exploring:

- How does the digital leadership deal with the existing hierarchical relationships and power distances between leaders and followers in today's organizations?
- Since the traditional hierarchical leadership practiced in most organizations will not cease to exist any time soon and that the old and the new have to co-exist together for a time being until the old is replaced by the new organizational structures and relationships, what can be done today to bridge that gap for leadership continuity between different generations of the workforce?

¹ In this chapter, different generations of American society are presented:

- Baby Boomers—born between 1944 and 1964
- Gen X—born between 1965 and 1979
- Millennial—born between 1980 and 1994. Some researchers refer to Millennials as Generation Y or Yers [13].
- Gen Z—born between 1995 and 2015

Retrieved on August 19, 2019, from <https://www.kasasa.com/articles/generations/gen-x-gen-y-gen-z>.

To address these and related issues in the digital age, this chapter offers alternative approaches and a conceptual framework to bridge the discontinuity gap between pre-digital and digital leader-followership that emerged as the consequence of contextual differences between physical and virtual space for leadership, socio-cultural and value changes among leaders and followers, theoretical shifts in leadership studies, and changes in leadership education.

2. The context of the pre-digital leadership era

The history of the Western world marks the rise and the fall of the “cult of leadership” [4], also known as the “cult of personality.” Rooted in antiquity and common until the middle of the twentieth century, it cost countless human lives, societies, and civilizations. Long before social psychologists described the close relationship between authority and the “thirst for obedience” [5, 6], and how followers’ perceptions and beliefs toward prototypical leaders may turn them into “leader worshipers” [7], leaders and company managers have used manipulative tactics to gain followers and maintain their power.

History shows us that the consequences of the abuse of leadership power have been ferocious and destructive for both leaders and followers, as well as for organizations, societies, and nations. Major world problems seem to revolve around unethical and toxic leaders [8, 9], and social environments have given birth to such despotic leaders as Queen Mary, Adolf Hitler, Joseph Stalin, Mao Zedong, Augusto Pinochet, and others. Thus, it can be assumed that the leadership paradigm of the twentieth century did not help the majority of the world’s population overcome poverty and injustice to live a decent life.

Moreover, while the *industrial era* segregated individuals as masters and slaves, managers and subordinates, separate and parallel identities of leaders and followers, employers and employees [10, 11], the *post-industrial era* emboldened followers to take leadership roles and improve leader-follower relationships. For instance, in the United States, the second part of the twentieth century marks the *era of followers* and the beginning of a shift from the corporate mindset of profit for the few and “corporate rights” to a collective mindset of profit for all and “human rights” [12] due to the rise of the post-industrial generations, Xers and Millennials [1, 13], and environmental awareness. As a result, 90% of the value- and mission-driven organizations in the non-profit, charity, and public sectors, as well as in philanthropy and freelance entrepreneurship, that are currently in operation were created after the 1950s [14].

Since the turn of the twenty-first century, the world has continued to change. Currently, we live in the *post-industrial* era of the information and digital age [15]. Today’s college students and young professionals, who represent the Millennial and Z generations, have gained access to electronic information on science, art, history, entertainment, video games, and electronic education and are more informed about the world and their environment than ever before. These generations have even created their own digital and virtual communities and languages with distinct grammar and vocabulary. They have also begun to lead and follow each other through online platforms such as Facebook, Twitter, Instagram, and YouTube.

3. Socio-cultural and value changes

Sociologists and social psychologists have observed a major cultural and generational shift from Boomer to Millennial generations in the areas of communication styles, acquisition and dissemination of information, interpersonal relationships,

the concept of physical and virtual space, and their attitude toward leadership authority, corporate loyalty, and commitment [16–18]. Scholars who have tried to bridge the generational divide between Boomers, Gen Xers, and Millennials have observed major differences between them [19]. Millennials, for instance, are team players, and having an organizational impact motivates them. They like open communication with their supervisors and are technologically savvy. Unlike Boomers, Millennials tend to have different perspectives on the world marketplace, supervisor-subordinate relationships, cultural diversity, task performance, communication styles, and information technologies [20]. Millennials lack the loyalty and work ethics established by Boomers and Gen Xers [19], and they tend to establish their own ethics and functional work relationships [21]. These and other empirical findings seem to suggest that there is a tension between pre- and post-digital generations. What will happen to current organizational structures when Boomers retire and Millennials take the lead?

Values and attitudes toward fellow human beings and the environment have also changed in the United States. The digital revolution and the advancement of digital technology have allowed environmental scientists to learn and process a vast amount of geospatial data about the planet Earth [22]. This data has shown that the climate is changing as a result of industrial pollutions [23]. The Digital Earth (DE) initiative, started by Vice President Al Gore in 1998, and rapid digitization gave birth to a new generation of global citizens, often referred to as *digital natives*, who tend to think and act digitally in a different way than previous generations, referred to *digital immigrants* [24]. The Boomers and some Xers are considered digital immigrants because they were either born or grew up before the digital revolution of the 1990s and 2000s. Millennials and the Zers, who were either born during or grew up after the digital revolution, are considered digital natives [25]. Digital natives seem to hold a very different vision and values about the world, the environment, the local and global economy, the concept of work, their personal and social well-being, and intercultural and international relations. An example of this is the March 2019 global march for climate change by Gen Zers.² Ironically, more Gen Zers express concerns for the well-being of the Earth than Boomers or Xers. This value and cultural change seems to indicate that a new digital leadership (DL) and digital followership (DF) is in the making in today's digital age.

4. Theoretical shift in leadership studies

Post-industrial leadership theories moved away from simplistic and cultic person-centered “great man” theories of leadership to system-based *complexity of leadership theories* (CLT) in the information and digital age [26, 27]. They offer new ways in which followers and non-followers may take more active and participative roles in leadership processes in society and organizations. Furthermore, value-based and relational leadership theories such as transformational, servant, ethical, collaborative, inclusive, distributed, shared, and adaptive seem to be more follower-centered. As a result, scholars' attention shifted from the leader as a person to leading and following as a process. This shift provides a “foundation for theories that move beyond hierarchical, individualistic, one-directional and de-contextualized notions of leadership” [28].

Additionally, complexity leadership theorists (CLT) raise legitimate concerns about “how, in the context of bureaucratic organizing structures, can organizational leaders enable emergence of the new solutions and innovation needed to survive and thrive in today's complex world?” [26]. The answer to this question

² Retrieved on August 15, 2019. Available from: <https://350.org/global-climate-march/>.

may be sought in an ancient metaphor where one attempts to withstand a new wine in an old wineskin.³ The “old wineskin” here represents the bureaucratic organizing structures and leader-centered theories of the twentieth century that may not sustain the “new wine,” which represents the twenty-first century virtual organizations and leading-following complex processes in the digital world. Thus, in order for the leading-following interactive process to occur (the “new wine”) in today’s digital age, a new organizational mindset and design seems necessary (the “new wineskins”) because the environmentally conscious and responsible digital generation (the “new wine”) cannot fully function in corporate hierarchical structures with leader-centered leadership mindset (the “old wineskins”).

Furthermore, role identity theories and research indicate that multiple or interchangeable role identities may be beneficial for positional leaders, who lead under constant demands and pressure, to be willing to share leadership with followers and adopt leader-follower multiple identities. If leaders and followers trade their leading and following roles in organizations and interchangeably lead and follow in various situations [29, 30], it may minimize leadership power abuse, eliminate social identity stereotyping for followers [31], reduce psychological distress [32–34], and prevent physical illnesses [34–36].

5. Leadership education change

Unlike most organizational leaders of the Boomer generation, who did not get a formal education in leadership, Millennials were exposed to leadership and organizational studies in their undergraduate and graduate curricula across the United States in the last 30–40 years [37]. Nowadays, every college or university student, or any individual interested in acquiring knowledge or a degree in leadership, has access to such studies via university or online databases without restrictions or discrimination. For instance, according to the Higher Education Program Directory of International Leadership Association (ILA),⁴ there are more than 380 undergraduate and graduate certificate programs in leadership and more than 200 bachelor’s degrees in leadership in 13 countries, including the United States. Nearly 28 countries offer 800 graduate degrees, and 10 countries offer 350 doctoral programs in leadership. According to Guthrie et al. [7], the ILA directory hosts more than 1570 academic programs worldwide. However, followership has not been fully integrated with the leadership curriculum and leadership education in the United States, which means that colleges do not teach and students do not learn the importance of followership.

Furthermore, the allocation of leadership training resources solely to company managers and leaders to increase their effectiveness and productivity [38] has resulted in leader-favored and leader-focused research and further separation of followers from the leadership process [39]. However, studies in followership as an inseparable role of leadership are expanding. College courses on followership and followership education began to emerge at the turn of the twenty-first century. Students are now learning how to be courageous followers by standing up to and for their leaders [40], challenging toxic leaders [13], and exercising intelligent disobedience to resist unethical leaders [41].

³ The “old wineskin” and “new wine” metaphor is taken from Matthew 9: 16–17 (NRSV): “No one sews a piece of unshrunk cloth on an old cloak ... Neither is new wine put into old wineskins; otherwise, the skins burst and the wine is spilled, and the skins are destroyed; but new wine is put into fresh wineskins, and so both are preserved.”

⁴ Retrieved on February 12, 2019. Available from: <http://www.ila-net.org/Resources/LPD/index.htm>.

6. The context of the digital era

The digitization of information on history, arts, science, business, health, and other subjects through information and communication technologies (ICT) has fundamentally transformed humans' way of life. New virtual environments have been formed for socialization and work through the World Wide Web and social media. As a result, digitalization has caused the emergence of virtual organizations as new work environments, called e-environments, new patterns of leadership, called e-leadership, and new boundaries for leader-follower relationships [42]. Additionally, as traditional organizations increase their online presence, the roles, responsibilities, functions, and behaviors of followers and leaders are changing. The traditional gap between leaders and followers of the industrial era, leaders doing leadership and followers doing followership, does not exist anymore. Followers seem to act and behave as leaders in the virtual world. Conversely, the power dynamics between leaders and followers are changing due to distant and remote interactions. The digital platform seems to foster interdependent collaboration and has swiped away some of the organizational power and privileges from leaders and empowered and emboldened followers to lead [43].

The following contextual factors have contributed to the change of power dynamics between leaders and followers in virtual organizations.

First, physical reality has been replaced by virtual reality. What is real has become a philosophical debate in the digital age. Leadership attributes based on one's physical appearance (e.g., physical strengths, manner and mannerism, age, race, gender, etc.) have less meaning in the leadership process than before.

Second, human interactions have moved from face-to-face to electronic communication. This has impacted the way traditional business and education is conducted. Virtual classrooms and workplaces have become the new norms for the digital age.

Third, digitization and automation have eliminated numerous managerial positions in today's digital economy. Virtual company workers nowadays need less managerial and direct supervision. The 40-hour workweek and most HR ethical conduct policies for face-to-face interactions do not apply to virtual organizations anymore. As a result, business relationships between leaders and followers have changed from top-down, or vertically influenced, to horizontal mutual collaborations and interactions.

Fourth, the era of scientific management, of "I am my job," has yielded to rapidly changing and evolving multi-tasking and collaborative job descriptions. Today's employees are expected to use multiple skills for multiple tasks to remain competitive in the job market. For instance, as the coal and fossil fuel industries are being replaced by new alternative energy enterprises, coal miners are expected to develop new technical and soft skills to be able to perform jobs that are available in today's digital economy.

Fifth, the replacement of the physical with digital interactions between leaders and followers in organizations has created new challenges for both parties. Holland et al. [44], who examined electronic leadership challenges in healthcare organizations, have learned that global virtual leaders and teams face challenges such as isolation, confusion, language barriers, cultural differences, and technological breakdowns. They seem to echo Antonakis and Atwater [45], who found that leader distance affects leadership outcome. Furthermore, a study conducted by Howell et al. showed that physical distance negatively moderates the relationship between transformational leaders and followers' performance in a business unit [46].

Sixth, the roles and functional differences between organizational leaders and followers in virtual organizations have become blurrier. Nowadays, followers have

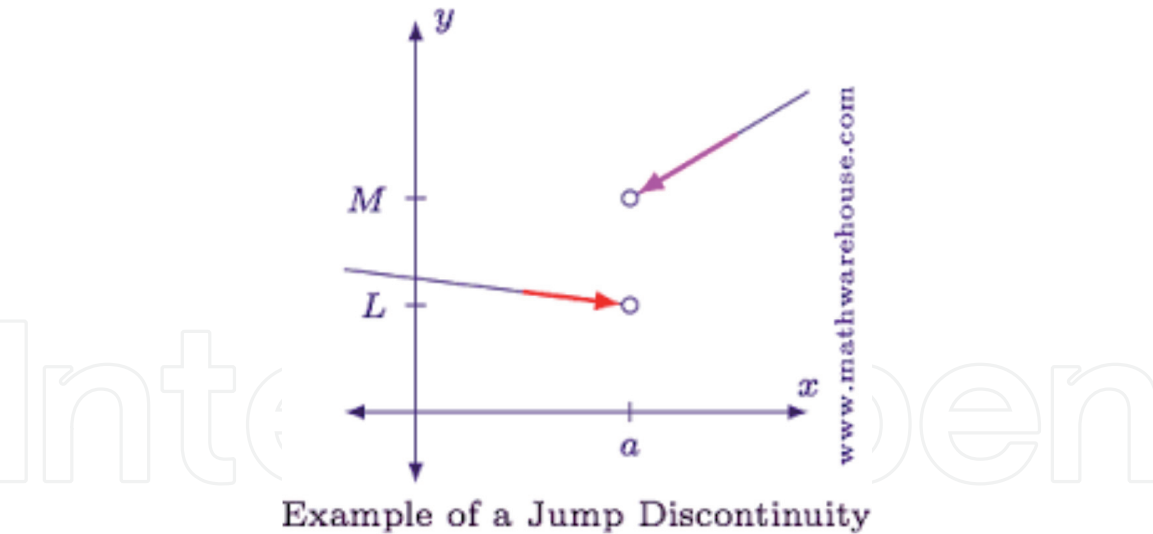


Figure 1.
A jump discontinuity in piecewise function.

opportunities to lead, and leaders are challenged to follow their supervisors, followers, and the constantly growing organizational policies and procedures in the workplace.

Seventh, digital natives and digital immigrants seem to speak different languages and represent different cultures. As a result, the worldview and communication gap between these generations has created new intergenerational tensions and challenges in the current digital age.

Above-mentioned seven contextual factors not only changed power dynamics between leaders and followers but also disrupted the “business as usual” mindset in organizations by created a discontinuity gap between the traditional and contemporary leadership understanding and practice. This disruptive phenomenon in mathematics is known as “jump discontinuity” within *piecewise functions*. **Figure 1** below is an example of a function that is discontinuous at $x = a$, because there is a gap between L and M .⁵

Both ends of the functional lines have limitations and different values.

$$\lim_{x \rightarrow a^-} f(x) = L \text{ and } \lim_{x \rightarrow a^+} f(x) = M \tag{1}$$

$$x \rightarrow a^- \quad x \rightarrow a^+ \tag{2}$$

The discontinuity of $\lim_{x \rightarrow a^-} f(x) = L$ may represent the traditional leadership function, while $\lim_{x \rightarrow a^+} f(x) = M$ —the contemporary leadership in the digital age. To make the traditional leadership L and the contemporary leadership M work as a continuous function, the L - M gap must be bridged. See the use of the discontinuity gap in 9.1. Application of LFT model to Digital Leader-Followership.

7. Literature on digital leadership

Literature on leadership implemented with digital technology can be placed into four major categories: (1) leadership in the digital age, (2) digital leadership, (3) e-leadership, and (4) cyber leadership.

⁵ Read more at <https://www.mathwarehouse.com/calculus/continuity/what-are-types-of-discontinuities.php#ixzz5zkep0JfR>

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7.1 Leadership in the digital age

Leadership in the digital age refers to “leadership in any institution or sector embedded in the broader transitions toward a more knowledge intensive society” through the use of ICT [47]. This transition brings new constraints and opportunities to the traditional understanding and practices of leadership in various organizations. To understand leadership in the digital age, it is important to note the effect of digitization on leadership in the virtual space. Khan [48] distinguishes six characteristics of digitization:

1. *Interconnectedness* through digital communication and interactions that allow participants to share knowledge and practices for a structured environment while “unleashing creativity, innovation, dynamic networking, and participation in unstructured settings” [49].
2. *Diminishing time lag and abundance of information* through a shortened time-frame of decision-making and increased speed of information and forms of interaction.
3. *Increased transparency and complexity*. As organizational structures become more complex and interconnected, the virtual space requires increased transparency.
4. *Hierarchy removal and dissolving of personal barriers* as a result of organizations and relationships becoming more fluid. For instance, “reverse mentoring programs” [50] break the boundaries of corporate positions for top managers and senior executives (i.e., digital immigrants), who learn from or are led by the younger generation (i.e., digital natives).
5. *Decision enabling and integrity enhancing*. Digitization allows making leadership decisions much faster and fosters personal integrity to maintain trust among participants.
6. *Humanising effect*. Digitization enables virtual collaborators to freely interact and interlink through virtual platforms and tools in a symbiotic way “in which virtually everyone and everything are mutually interdependent” [51].

7.2 Digital leadership

Digital leadership refers to leadership in the core sectors of the knowledge society—the three “C’s of computing, communications and content (broadcasting and print), and now multi-media” [52]. Narbona defines digital leadership as “human quality of leadership exercised with digital tools in the virtual world” [53]. Others define it as “doing the right things for the strategic success of digitalization” for organizations that require different mindsets, skillsets, and workplaces [54]. Digital leadership is relational leadership because the relationships between leaders and followers in the social media platform (e.g., Twitter) occupy the prominent role [55]. Digital leadership is also occasional, unpredictable, and organic. In a matter of hours, days, or weeks, one may gain an enormous influence through verbal or visual messages via the World Wide Web. For instance, those who gain more followers in their Twitter, Facebook, or YouTube accounts rise to a level of influence that humans have never seen before. Thus, digital leadership is not static positional leadership but rather spontaneous, fluid, short-lived, and role-based.

7.3 E-leadership

Avolio et al. define *e-leadership* as “a social influence process mediated by AIT [advanced information technology] to produce a change in attitudes, feelings, thinking, behavior, and/or performance with individuals, groups, and/or organizations” [56]. According to DasGupta’s literature review on e-leadership, it has the same issues as traditional leadership (i.e., vision, direction, motivation, inspiration, trust). However, some challenges that e-leaders face are as follows: effective communication, conveying enthusiasm digitally, (b) building trust without face-to-face interactions, (c) creating presence, (d) inspiring, (e) mentoring, (f) monitoring and controlling social loafing, (g) fostering technical competence, and (h) finding work-life balance [57].

7.4 Cyber leadership

Cyber leadership refers to a responsibility that enhances the organizational mission, business processes, and functions “by leveraging resources, information and information technology to deliver solutions that are effective, efficient, and secure” [58]. The essence of cyber leadership is to deal with information warfare, cyber-security threats, and defense against cyberattacks in the virtual world. In a sense, cyber leadership is a digital version of military leadership with an effort to transform military leaders into cyber-strategic leaders [59]. Francesca Spidalieri argues:

Cyber defense requires not only IT experts with computer science, electrical engineering, and software security skills, but also professionals with an understanding of political theory, institutional theory, behavioral psychology, ethics, international law, international relations, and additional social sciences...the pillars of our society...are often led by individuals with extremely limited exposure to cyber issues and the existential threats they pose [60].

8. Alternative approaches to digital leader-followership

The literature clearly indicates the leader-centeredness of all four characteristics of digital leadership, while little or no mention is given to the role of digital followers in the digital age. However, what is intriguing is that the digital environment, as a new organizational structure, abolishes the traditional hierarchical structures and relationships between static and positional leaders and followers by turning them into fluid leader-followers and authentic humans. Additionally, definitions and concepts of digital leadership seem to equally apply to those who lead and those who follow in virtual organizations. For instance, to overcome the challenges and paradoxes of e-leadership, such as the individual vs. the community, swift-ness vs. mindfulness, top-down vs. grassroots, micro vs. macro perspectives, and flexible vs. steady, Pulley and Sessa suggest that people in organizations ought to participate in leadership at all levels [61]. This means that digital leadership (and followership) is and should be everyone’s business, not just the positional leader of the organization [62, 63].

Furthermore, Annunzio [64] seems to advocate for inter-generational collaborations between e-leaders among Boomers, Gen Xers, and Gen Yers to sustain the traditional structures of corporate America. As seen above, the digitization has already created a shared platform for intergenerational collaboration because digital immigrants (often employers) will always need the support of digital natives (often employees) to transform organizations to meet the challenges of the digital age.

There is a significant and growing body of literature on followership, multiple-role identities, and process-based, distributed, “shared,” “collective,” “collaborative,” “relational,” and “co-” leadership [65] that are more follower-inclusive and relational-based, including inclusive and adapted leadership. They will be considered below as alternative approaches to leader-followership in the digital age. These models seem to best apply to virtual and cyber situations that organizations and communities face in today’s digital age.

8.1 Followership

Followership research investigates “the nature and impact of followers and following in the leadership process” [66]. It emphasizes the importance of the role of the followers in organizations and how various types of followership behaviors can be observed in response to leader behaviors [8, 67, 68]. Other scholars discuss how follower identities and behaviors influence and shape leadership behaviors and outcomes [69–71]. Followers’ and leaders’ roles are not static. The static role of the “leader” and the “follower” seems unnatural because one does not lead like a lion or follow like a sheep at all times [8, 72]. One may lead in one and follow in another situation [30].

Thus, the followership research may explain how the digital followership may work in virtual context if it refuses to follow the same one-sided attitude of the leadership research that intentionally focused on the leader behavior and omitted the follower behavior as one continuum or the two sides of the one coin [73]. Rather, by studying the leading-following “tang” between leaders and followers,⁶ it offers a more balanced understanding of the leadership process, one that involves (1) “leading-following double interacts,” (2) stimulates “the construction of leader and follower identities,” and takes into account the fact that (3) leading-following interactions are developed “within an environment and context that are endogenous ... to the leading-following process,” that (4) “the leading-following process is fluid,” and (5) that the dynamic environment plays a crucial role in nurturing fluid leading-following interactions [74].

8.2 Leader-follower multi-role identities

In today’s information and digital age, single identity (“I am a leader” or “I am a follower”) of the industrial leadership era has shifted to *multiple-role identity* paradigm of leader-followership (“I function as a leader and a follower”). Multiple-role identity theories explain how multiple roles may function in today’s multifunctional and diverse workforce. For instance, individuals often occupy more than one social position and play more than one role in society. Hence, people develop multiple identities (e.g., parent, worker, volunteer, etc.) that are naturally activated in various social interactions. Burke and Stets put it this way: “A person could be a student in one context, a friend in another, a mother, a daughter, a teacher, a blood donor, a homeowner, and so on” [75]. Multiple [role] identities, according to them, “function together within the self [through internal framework] and within the overall identity verification process [external framework]” [75]. Multiple identities exist within the person and across persons [76]. These multiple identities among multiple individuals may interact in a given situation (e.g., individuals working together to accomplish a group task). Thus, multiple-role identity theories explain how one may operate in both leader and follower roles and multiple competencies in organizations, especially in the digital age.

⁶ Watch a video on “Leadership and followership: What tango teaches us about these roles in life” at <https://www.youtube.com/watch?v=Cswrnc1dggg>.

8.3 Process-based leadership

Leadership and organizational studies in the West moved from a leader-focused to a process-based understanding of leader-follower relationships in organizations in the last 20 years [69, 71, 77–83]. It is no longer about the leader but the process of leading and following, where individuals may function as both leaders and followers based on personal strengths or competencies. This shift may result in increased reciprocity or exchange of leading and following behaviors, roles, and functions and a decrease of static leader and follower positions in organizations. Thus, the *process-based* approach to leadership asserts that leadership is no longer about the positional leader, but the dynamic and dialectic process of leader-follower multi-dimensional human interactions [77, 84, 85]. This approach may well be applied to digital leadership in virtual organizations where the uncertainty and the unpredictability of situations may demand non-leaders engage in the leadership process by exercising their strengths or competencies for organizational goal achievement.

8.4 Distributed leadership

Distributed leadership “recognizes individual and collective agency, and the reciprocal nature of the practice of leadership” [86], which is more important than the particular leadership roles or the specific leadership function. It implies that “leadership tasks are dispersed rather than delegated and that such dispersal is widely enacted across organizations” [86]. Therefore, distributed leadership is best understood as a practice distributed over leaders, followers, and their situation, which incorporates the activities of multiple groups of individuals. Harris et al. argue, “where leadership is distributed then inevitably the forces of power, authority and control are also distributed and shared” [86].

Distributed leadership faces two challenges: (1) establishing collective trust toward a common goal and (2) actively engaging and guiding those who have yet to form mutual trusting relationships [86]. For distributed leadership to occur, trust and empathy are needed for authentic collaboration, information sharing, and interdependent idea generation [87]. Nevertheless, the distributed paradigm of leadership tolerates uncertainty, diversity of perspectives, flexibility, functionality, and role exchange between leading and following. It is open to global challenges and solutions, is eager to acquire new knowledge, exhibits a constant learning attitude, and, unlike earlier leadership approaches, maintains an egalitarian and results-oriented approach [47]. Thus, distributed leadership may be useful for digital native generations in the digital era. The challenge that distributed leadership may pose to complex digital teams is that it lacks fluidity between simultaneous leading and following actions in group and organizational settings [88].

8.5 Shared leadership

Shared leadership, viewed as “different individuals enact leader and follower roles at different points in time” [89], challenges the traditional understanding of leadership in teams where the focus has been shifted from a single static leader or follower and vertical, one-directional influence to multiple and dynamic leaders and followers and horizontal, leading-following, reciprocal influence processes and their impact on team outcomes [88–91]. Unlike traditional leadership theories that focus on the role of formal, appointed leaders, shared leadership focuses on the leading and following processes of team members [92]. This is a shift in the leadership paradigm from an individual to a collective [93].

The digital age requires a team approach to complex leadership problems that often involve multiple organizations, societies, cultures, and nations sharing knowledge, skills, and expertise. No single leader possesses the necessary knowledge, skills, and disposition to address global leadership challenges in today's virtual world. Thus, shared leadership allows the sharing of leading and following responsibilities not only among the team members, but also with other teams. For instance, team members with certain specialized skillsets might engage in leadership behavior in one domain and adopt a follower role in another domain [94, 95]. Thus, shared leadership, which also assumes shared followership [88], may meet the leading and following needs for the digital natives in virtual organizations, as they grew up in a sharing environment where knowledge, experiences, perspectives, and electronic files were freely shared for learning and business across the oceans [96].

8.6 Collective leadership

Collective leadership refers to “a dynamic leadership process in which a defined leader, or set of leaders, selectively utilize skills and expertise within a network, effectively distributing elements of the leadership role as the situation or problem at hand requires” [97]. Collective leadership assumes that each member of the team selectively performs leadership roles that match her or his skills and expertise and that when the situation or the problem at hand changes, members of the team effectively distribute elements of the leadership role to others [98].

Collective leadership, unlike the traditional hierarchical models of leadership, is also applicable to global leadership in the digital age. For instance, to address global issues such as climate change, where many international governmental agencies and private organizations are involved, a new model of leadership is expected. Goodchild and Associates are convinced that “any effort to develop a next-generation Digital Earth will require new governance models” [99].⁷

Collective leadership may be effectively used in cyber leadership where multiple and various skills and expertise are required to engage in cybersecurity or cyber defense.

8.7 Adaptive leadership

Adaptive leadership is another follower-centered approach to the leadership process. However, the earlier theories of adaptive leadership continue to be leader-centered. For example, adaptive leadership has portrayed the tasks of the static leader as helping static followers adapt to the challenges they encounter in a given situation, changing and adjusting to new circumstances, and grappling with the problems at hand [100]. Moreover, the adaptive leadership process incorporates four standpoints: systems, biological, service, and psychotherapy perspectives [101]. The task of the static leader, then, is to recognize the complexities of

⁷ Michael F. Goodchild and Associates (Huadong Guob, Alessandro Annoni, Ling Bian, Kees de Bie, Frederick Campbell, Max Craglia, Manfred Ehlers, John van Genderen, Davina Jackson, Anthony J. Lewis, Martino Pesaresi, Gábor Remetey-Fülöpp, Richard Simpson, Andrew Skidmore, Changlin Wang, and Peter Woodgate) produced a paper in 2012 entitled “Next-generation digital earth”, published in the Proceedings of the National Academy of Sciences, as the outcome of the workshop on next-generation Digital Earth held in Beijing in March 2011 hosted by the Center for Earth Observation and Digital Earth of the Chinese Academy of Sciences and the Secretariat of the International Society for Digital Earth (ISDE).

leadership situations and enable followers to adapt to complex leadership and organizational changes. Similarly, it is the leader who makes followers aware of biological changes for adaptation and, by using her or his positional leadership authority, serves followers' needs by finding solutions to their problems. Finally, by using the psychotherapy perspective, the leader then creates a supportive environment for successful adaptation [100]. This approach is an old paradigm of the Boomer generation that does not fit with the demands of the digital age.

Thus, I propose DeRue's *adaptive leadership theory*, which advocates for dynamic and fluid leading-following adaptive processes where individuals cultivate leader-follower identities through simultaneous and interchangeable leading and following actions within the group. This theory challenges the traditional "individualistic, hierarchical, one-directional and de-contextualized notions of leadership" [88]. Furthermore, DeRue rightly noted, "the nature of work in organizations is changing to include more interdependent work, more fluid and less centralized work structures, and a greater emphasis on the need for leadership at all levels of an organization" [28]. Thus, the aforementioned adaptive leadership theory seems most relevant to digital natives because it provides a theoretical basis to adapt and succeed in leading and following double interactions between and by all members of groups in virtual organizations.

9. A conceptual framework for the digital leader-followership

As seen above, current interdisciplinary studies on leader-follower relationships and identity formation provide new and fresh theoretical perspectives for individuals to develop multiple leader and follower role identities, becoming a leader in one situation and a follower in another. Thus, the industrial paradigm of the leader and the follower as static and separate social identities must be replaced by hybrid leader-follower multiple-role identities to make leadership (the process of leading and following) applicable for a digital environment. In other words, no one is a leader or a follower all the time and in all circumstances. Everyone is and should see herself or himself as a leader and a follower in different situations and contexts for the social construct of leadership to occur. Thus, leadership should not be perceived as a title for a privileged minority and followership as a title for a less-privileged majority in organizations, especially in today's digital age.

The leader-follower trade (LFT) approach offers a conceptual framework to address the century-long social identity segregation between powerful leaders and powerless followers [30]. The model encourages everyone to cultivate leading and following multiple-role identities and acquire both skills to exercise fluidity in leading and following. Such a symbiotic process of leading and following between individuals with multiple roles may create dynamic and healthy work conditions for (1) situational and context-based leaders and followers to build mutual trust and respect; (2) a fair distribution of power and resources among the members of the organization based on mutual influence; (3) cultivating self-awareness and self-discovery of personal strengths among team members as hybrid individuals capable of leading and following; and (4) mutually accountable relationships between multiple teams and members through transparent and authentic organizational communication.

LFT is particularly effective in cyber leadership, where a shorter time is necessary for decision-making or responding to cyberattacks. Since leading and following responsibilities are shared and exchanged among team members based on their

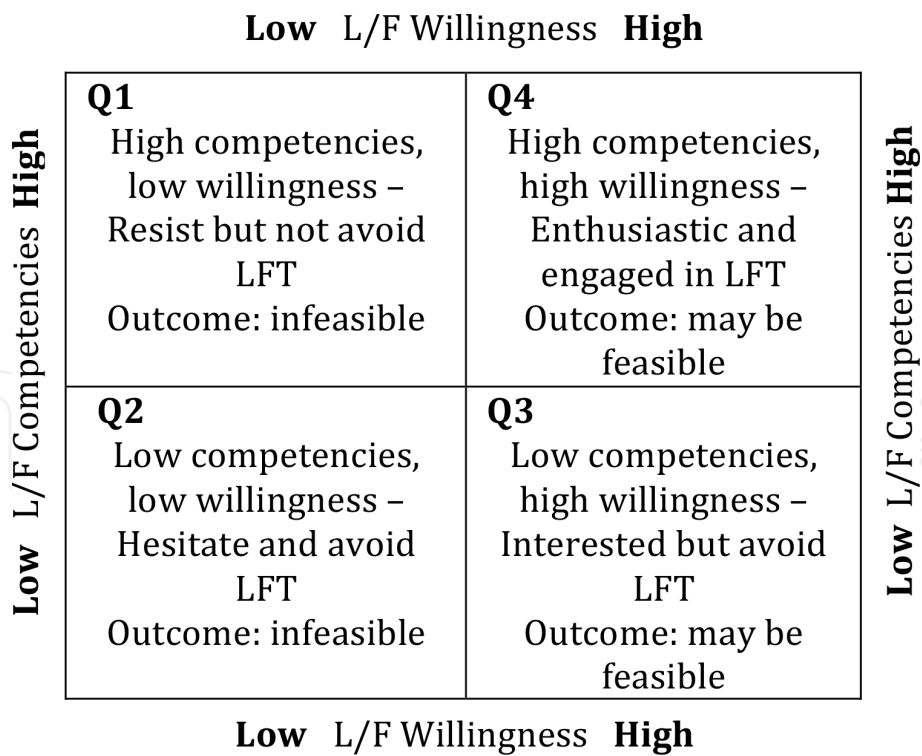


Figure 2.
The feasibility quadrants of the LFT approach.

expertise, a hierarchical and top-down leadership becomes unnecessary, and the positional barriers may be easily dissolved to achieve the desired outcome. In this case, the one who makes the decision takes personal responsibility for the outcome of her or his decision.

The LFT approach may be realized in virtual organizations when there is a high level of *willingness* and *competency* to interchangeably shift roles from leading to following and from following to leading based on one’s expertise, personal preference, strengths, and organizational goals. **Figure 2** illustrates the feasibility of the LFT approach from the perspectives of leading-following competencies and willingness to trade leading and following roles simultaneously or interchangeably.

Quadrant 1: When leader-follower competencies are high but the willingness is low, it is more likely that digital leader-followers resist but do not avoid LFT. Thus, the LFT approach may be feasible.

Quadrant 2: When leader-follower willingness and competencies are low, it is more likely that digital leader-followers hesitate and avoid LFT. Thus, the LFT approach is infeasible.

Quadrant 3: When the leader-follower competencies are low but the willingness is high, it is more likely that leaders and followers are interested but avoid LFT. Thus, the LFT approach may be feasible.

Quadrant 4: When the leader-follower competencies and willingness are high, it is more likely that leaders and followers may enthusiastically engage in LFT. Thus, the LFT approach is feasible.

From the quadrant analysis, it is apparent that the LFT approach is achievable only if (1) digital leaders acquire following skills and digital followers acquire leadership skills and (2) both digital leaders and followers are willing to trade their roles by cultivating multiple leading-following identities.

What are the personal and group incentives for the applicability of the LFT approach in the digital age?

Leading and following competencies:

- a. Many leaders fail. Thus, followers lose their trust in them. This factor may motivate followers to get involved in the leadership process and aspire to lead.
- b. The culture has shifted emphasis from powerful leaders to powerful followers who elect and select their leaders through democratic processes (e.g., a vote of confidence or an election).
- c. Leadership education and resources are available to today's digital followers to learn how to lead effectively and ethically if they so choose. Similarly, the lack of digital competencies among *digital immigrants* may motivate them to follow and learn from *digital natives*.

Willingness to trade leading and following roles:

- a. Leading roles are stressful and harmful to human health. The research on multiple-identity theories indicates that those who have multiple roles in society live healthier lives than those who have one role. Thus, the exchange of leading and following roles may prevent burnout and psychological distress.
- b. Shared responsibilities assume shared accountability. Thus, it is not fair that organizational leaders take full responsibility for those who are not willing to participate in the leadership process. Followers should also be held accountable for participating in the decision-making processes.
- c. Sharing leadership responsibilities also may mean sharing the profits and benefits of leadership. This may motivate followers and facilitate a fair distribution of wages and compensation.

9.1 Application of LFT model for digital leader-followership

As mentioned in "The Context of the Digital Era," the emerging digital leadership defers from the traditional hierarchical leadership on many areas such as socio-cultural, theoretical, philosophical, and generational. The disruptive and unpredicted nature of the digital leadership seems to cause an on-going change and discontinuity among leading and following functional patterns in today's organizations who are in a transition from industrial to information and digital age.

The LFT approach may well serve as a bridge model between the traditional and emerging leadership paradigms in the digital age. For instance, by fostering leader-follower competences and willingness to trade leading and following roles between digital immigrant and digital native generations, the existing L-M gap may be bridged. Examples of bridge building:

- Salkowitz offers to close the digital gap and build intergenerational bridges by empowering the younger generation to educate older workers in information technology [102].
- Chaudhuri and Ghosh recommend reverse mentoring programs for Boomer and Millennial generations to keep the former engaged and the latter committed [103].

- To bridge the gap between generations, Kornelsen suggests leading with Millennials in a VUCA-world (volatile, uncertain, complex, and ambiguous) [104].

10. Addressing leadership problems in the digital age

The number one problem in the digital age continues to be the abuse of power and position, which seem to nurture selfish and narcissistic human instincts that are destructive for leaders, society, and even for the world.⁸ Leadership should not focus on the person in the leadership position but rather on the process of leading and following with appropriate checks and balances.

The number two problem in the digital age is the lack of appreciation for following. We do not teach followership and what it means to be a good and responsible follower. As a result, followers are easily misled, manipulated, or even deceived by their leaders. Thus, followership must be taught and practiced in schools and universities because followers are the change-agents and the power holders in the digital age.

11. Conclusion

The post-industrial and post-structuralist era of leader-followership has set the stage for multiple leader-follower identities and new organizational structures to emerge. In today's virtual reality, individuals should be able to freely exchange leading and following roles according to organizational or contextual needs. Such a mindset may lay the groundwork for mutual accountability between situational and role-based leaders and encourage multiple-role identity leader-followers to emerge [76]. In other words, followers can become leaders and leaders can become followers [105–107] because one does not exist without the other [30, 88]. Thus, a new generation of hybrid leader-followers and less-hierarchical organizational structures are on the horizon, where the members of virtual organizations may lead and follow not based on their static positions or positional authority but according to their skills, expertise, and competencies.

11.1 Limitations

This study has source and topical limitations. The *sources* used in this chapter are limited to available peer-reviewed and research-based articles, books, thesis, and dissertations in the following digital databases: Google.com, Scholar.google.com, ABI/INFORM Complete (ProQuest), Academic Search Complete (EBSCO), Business Source Premier (EBSCO), Communication & Mass Media Complete, JSTOR Business Collection, ProQuest Dissertations & Theses Global, SAGE Premier, and Springer e-Journals. Additionally, due to the chapter limitation, the following *topics* have not been addressed in this study: cybersecurity leadership, leadership in game-based environments, leadership in the Second Life, leader identity in the virtual world (avatars vs. authentic leaders), automation, robotization, and leadership, artificial intelligence and leadership.

⁸ Examples of destructive leadership: Spartacus's slave rebellion from 73 to 71 BCE; Crusades from 1096 to 1192; Protestants Reformation from 1517 to 1648; French Revolution from 1789 to 1799; American Civil War from 1861 to 1865; World War I from 1914 to 1918; Russian Bolshevik Revolution from 1917 to 1918; World War II from 1941 to 1945.

11.2 Implications for future research

Literature on all four categories of digital leadership discussed in this chapter is scarce particularly when it comes to comparing theoretical and practical differences between leadership in pre-digital and digital age. More empirical data is necessary to measure the effectiveness of contemporary models of leadership such distributed, shared, collective, and adaptive approaches for the digital age. Also, further research is needed in the following areas:

- The power dynamics among e-leaders and e-followers in virtual organizations.
- How leader and follower identities are formed in the virtual world and their sustainability over time.
- Whether or not the process-based understudying of leadership is more applicable and relevant to leadership in the digital age.
- Feasibility of the LFT conceptual framework in cyber leadership for maximum fluidity and flexibility in decision-making processes.

Conflict of interest

The author declares no conflict of interest.

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References

- [1] Wiedmer T. Generations do differ: Best practices in leading traditionalists, boomers, and generations X, Y, and Z. *Delta Kappa Gamma Bulletin*. 2015;**82**:51
- [2] Bolden R. Distributed leadership in organizations: A review of theory and research. *International Journal of Management Reviews*. 2011;**13**:251-269. DOI: 10.1111/j.1468-2370.2011.00306.x
- [3] Guthrie KL, Teig TS, Hu P. *Academic Leadership Programs in the United States*. Tallahassee: Leadership Learning Research Center, Florida State University; 2018
- [4] Kelley RE. *The Power of Followership*. New York: Doubleday; 1992. 260 p
- [5] Haney C, Banks C, Zimbardo P. A study of prisoners and guards in a simulated prison. *Theatre in Prison: Theory Into Practice*. 2004;**9**:19-32
- [6] Milgram S. *Obedience to Authority: An Experimental View*. New York: Harper Perennial Modern Thought; 2009. 256 p
- [7] Hogg MA. Social identity processes and the empowerment of followers. In: Riggio RE, Chaleff I, Lipman-Blumen J, editors. *The Art of Followership: How Great Followers Create Great Leaders and Organizations*. San Francisco: Jossey-Bass; 2008. pp. 267-276
- [8] Kellerman B. *The End of Leadership*. New York: Harper Collins; 2012. 233 p
- [9] Lipman-Blumen J. *The Allure of Toxic Leaders: Why we Follow Destructive Bosses and Corrupt Politicians—And How We Can Survive Them*. New York: Oxford University Press; 2006. 320 p
- [10] Clark TN, Lipset SM, editors. *The Breakdown of Class Politics: A Debate on Post-Industrial Stratification*. Washington DC: Woodrow Wilson Center Press; 2001. 352 p
- [11] Rost JC. *Leadership for the Twenty-First Century*. Westport: Praeger; 1993. 220 p
- [12] Hartmann T. *Unequal Protection: How the Corporations Became “People”—And how you Can Fight Back*. Oakland: Berrett-Koehler; 2010. 384 p
- [13] Zemke R, Raines C, Filipczak B. *Generations at Work: Managing the Clash of Boomers, Gen Xers, and Gen Yers in the Workplace*. 2nd ed. New York: AMACOM; 2013. 304 p
- [14] Hall PD. Historical perspectives on nonprofit organizations in the United States. In: Renz DO, Herman RD, editors. *The Jossey-Bass Handbook of Nonprofit Leadership and Management*. Hoboken: John Wiley & Sons; 2016. pp. 3-42
- [15] Liagouras G. The political economy of post-industrial capitalism. *Thesis Eleven*. 2005;**81**:20-35. DOI: 10.1177/0725513605051612
- [16] Burke R, Cooper CL, Antoniou A-SG. *The Multi-Generational and Aging Workforce: Challenges and Opportunities*. Cheltenham: Edward Elgar Publishing Limited, UK; 2015. 448 p
- [17] Deal JJ, Altman DG, Rogelberg SG. Millennials at work: What we know and what we need to do (if anything). *Journal of Business and Psychology*. 2010;**25**:191-199. DOI: 10.1007/s10869-010-9177-2
- [18] Singh P, Bhandarker A, Rai S. *Millennials and the Workplace: Challenges for Architecting the Organizations of Tomorrow*. India: SAGE Publications; 2012. 272 p

- [19] Marston C. Motivating the “What’s in it for Me?” Workforce: Manage across the Generational Divide and Increase Profits. Hoboken: Wiley; 2007. 240 p
- [20] Myers KK, Sadaghiani K. Millennials in the workplace: A communication perspective on millennials’ organizational relationships and performance. *Journal of Business and Psychology*. 2010;252:225-238. DOI: 10.1007/s10869-010-9172-7
- [21] McGuire D, By RT, Hutchings K. Towards a model of human resource solutions for achieving intergenerational interaction in organizations. *Journal of European Industrial Training*. 2007;31:592-608. DOI: 10.1108/03090590710833651
- [22] Gore A. The digital earth: Understanding our planet in the 21st century. *Australian Surveyor*. 1998;432:89-91. DOI: 10.1080/00050326.1998.10441850
- [23] Craglia M, de Bie K, Jackson D, Pesaresi M, Remetey-Fülöpp G, Wang C, van Genderen J. Digital earth 2020: Towards the vision for the next decade. *International Journal of Digital Earth*. 2012;51:4-21. DOI: 10.1080/17538947.2011.638500
- [24] Bayne S, Ross J. The ‘digital native’ and ‘digital immigrant’: A dangerous opposition. In: *Annual Conference of the Society for Research into Higher Education (SRHE)*; December 2005. Vol. 20; 2007. pp. 1-6. Edinburgh: ac.uk/staff/sian/natives_final.pdf [Accessed: 20 March 2013]
- [25] Prensky M. Digital natives, digital immigrants part 1. *On the Horizon*. 2001;95:1-6. DOI: 10.1108/10748120110424816
- [26] Uhl-Bien M, Marion R, McKelvey B. Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. *The Leadership Quarterly*. 2007;184:298-318. DOI: 10.1016/j.leaqua.2007.04.002
- [27] Arena MJ, Uhl-Bien M. Complexity leadership theory: Shifting from human capital to social capital. *People and Strategy*. 2016;392:22-27
- [28] DeRue DS. Adaptive leadership theory: Leading and following as a complex adaptive process. *Research in Organizational Behavior*. 2011;31:145. DOI: 10.1016/j.riob.2011.09.007
- [29] Cox RWIII, Plagens GK, Sylla K. The leadership-followership dynamic: Making the choice to follow. *International Journal of Interdisciplinary Social Sciences*. 2010;58:37-51. DOI: 10.18848/1833-1882/CGP/v05i08/51819
- [30] Malakyan PG. Followership in leadership studies: A case of leader-follower trade approach. *Journal of Leadership Studies*. 2014;74:6-22. DOI: 10.1002/jls.21306
- [31] Van Dick R, Hirst G, Grojean MW, Wieseke J. Relationships between leader and follower organizational identification and implications for follower attitudes and behaviors. *Journal of Occupational and Organizational Psychology*. 2007;801:133-150. DOI: 10.1348/096317905X71831
- [32] Kikuzawa S. Multiple roles and mental health in cross-cultural perspective: The elderly in the United States and Japan. *Journal of Health and Social Behavior*. 2006;471:62-76. DOI: 10.1177/002214650604700105
- [33] Sachs-Ericsson N, Ciarlo JA. Gender, social roles, and mental health: An epidemiological perspective. *Sex Roles*. 2000;439-10:605-628. DOI: 10.1023/A:1007148407005
- [34] Wethington E, Moen P, Glasgow N, Pillemer K. Multiple roles, social integration, and health. In:

Pillemer K, Moen P, Glasgow N, Wethington E, editors. *Social Integration In the Second Half of Life*. Baltimore: The Johns Hopkins University Press; 2000. pp. 48-71

[35] Barnett RC, Hyde JS. Women, men, work, and family: An expansionist theory. *The American Psychologist*. 2001;**56**10:781-796. DOI: 10.1037/0003-066X.56.10.781

[36] Janzen BL, Muhajarine N. Social role occupancy, gender, income adequacy, life stage and health: A longitudinal study of employed Canadian men and women. *Social Science and Medicine*. 2003;**57**8:1491-1503. DOI: 10.1016/S0277-9536(02)00544-0

[37] Komives SR. Advancing leadership education. In: Komives SK, Dugan JD, Owen JE, Slack C, Wagner W, editors. *The Handbook for Student Leadership Development*. 2nd ed. San Francisco: Jossey-Bass; 2011. pp. 1-34

[38] Shafritz JM, Ott J, Jang YS. *Classics of Organization Theory*. Boston: Cengage Learning; 2015. p. 496

[39] Van Vugt M, Hogan R, Kaiser RB. Leadership, followership, and evolution: Some lessons from the past. *The American Psychologist*. 2008;**63**3:182-196. DOI: 10.1037/0003-066X.63.3.182

[40] Chaleff I. *The Courageous Follower: Standing up to and for our Leaders*. Berrett-Koehler Publishers; 2009. 288 p

[41] Chaleff I. *Intelligent Disobedience: Doing Right When What You're Told to Do Is Wrong*. San Francisco: Berrett-Koehler Publishers; 2015. 224 p

[42] Mohammad K. E-leadership: The emerging new leadership for the virtual organization. *Journal of Managerial Sciences*. 2009;**31**:1-21

[43] Vonderembse MA, Raghunathan TS, Subba Rao S. A post-industrial

paradigm: To integrate and automate manufacturing. *International Journal of Production Research*. 1997;**35**9:2579-2600. DOI: 10.1080/002075497194679

[44] Holland JB, Malvey D, Fottler MD. Health care globalization: A need for virtual leadership. *The Health Care Manager*. 2009;**28**2:117-123. DOI: 10.1097/HCM.0b013e3181a2cb63

[45] Antonakis J, Atwater L. Leader distance: A review and a proposed theory. *The Leadership Quarterly*. 2002;**13**6:673-704. DOI: 10.1016/S1048-9843(02)00155-8

[46] Howell JM, Neufeld DJ, Avolio BJ. Examining the relationship of leadership and physical distance with business unit performance. *The Leadership Quarterly*. 2005;**16**2:273-285. DOI: 10.1016/j.leaqua.2005.01.004

[47] Wilson EJIII, Goethals GR, Sorenson G, Burns JM. Leadership in the digital age. *Encyclopedia of Leadership*. 2004;**4**:858

[48] Khan S. Leadership in the digital age: A study on the effects of digitalisation on top management leadership [master's thesis]. Stockholm Business School, Stockholm University; 2016. 54 p. OAI: DiVA.org:su-133809

[49] Nachira F, Nicolai A, Dini P, Le Louarn M, Leon LR. *Digital Business Ecosystems*. European Commission; 2006. 9 p. Available from: <http://www.digital-ecosystems.org>

[50] Westerman G, Bonnet D, McAfee A. *Leading digital: Turning technology into business transformation*. Boston: Harvard Business Review Press; 2014. p. 229

[51] Berman S, Marshall A. The next digital transformation: From an individual- centered to an everyone-to-everyone economy. *Strategy and*

- Leadership. 2014;**425**(13). DOI: 10.1108/SL-07-2014-0048/full/html
- [52] Wilson III EJ, Goethals GR, Sorenson G, Burns JM. Leadership in the digital age. *Encyclopedia of Leadership*. 2004;**4**:859
- [53] Narbona J. Digital leadership, twitter and Pope Francis. *Church, Communication and Culture*. 2016;**11**:93
- [54] El Sawy OA, Kræmmergaard P, Amsinck H, Vinther AL. How LEGO built the foundations and enterprise capabilities for digital leadership. *MIS Quarterly Executive*. 2016;**152**:141
- [55] Li C. *Open Leadership: How Social Technology Can Transform the Way You Lead*. San Francisco: Jossey-Bass; 2010. 341 p
- [56] Avolio BJ, Kahai S, Dodge GE. E-leadership: Implications for theory, research, and practice. *The Leadership Quarterly*. 2000;**114**:617. DOI: 10.1016/S1048-9843(00)00062-X
- [57] DasGupta P. Literature review: E-leadership. *Emerging Leadership Journeys*. 2011;**41**:1-36
- [58] Kern S, Peifer K. Senior cyber leadership: Why a technically competent workforce is not enough. In: Capellman D et al., editors. *The Cyber Security Forum Initiative (CSFI)*. 2015;**9**:3
- [59] Spidalieri F, McArdle J. Transforming the next generation of military leaders into cyber-strategic leaders: The role of cybersecurity education in US service academies. *The Cyber Defense Review*. 2016;**11**:141-164
- [60] Kern S, Peifer K. Senior cyber leadership: Why a technically competent workforce is not enough. In: Capellman D et al. editors. *The Cyber Security Forum Initiative*. 2015;**9**:6. Available from: www.scfi.us
- [61] Pulley ML, Sessa VI. E-leadership: Tackling complex challenges. *Industrial and Commercial Training*. 2001;**336**:225-230. DOI: 10.1108/00197850110405379
- [62] Hughes RL, Ginnett RC, Curphy GJ. Leadership involves an interaction between the leader, the followers, and the situation. *Air Command and Staff College Distance Learning, Version*. 1999;**3**:12-21
- [63] Kouzes JM, Posner BZ. *The Student Leadership Challenge: Five Practices for Becoming an Exemplary Leader*. San Francisco: John Wiley & Sons; 2018. 336 p
- [64] Annunzio S. *ELeadership: Proven Techniques for Creating an Environment of Speed and Flexibility in the Digital Economy*. New York: Free Press; 2001. 256 p
- [65] Bolden R. Distributed leadership in organizations: A review of theory and research. *International Journal of Management Reviews*. 2011;**133**:254. DOI: 10.1111/j.1468-2370.2011.00306.x
- [66] Uhl-Bien M, Riggio RE, Lowe KB, Carsten MK. Followership theory: A review and research agenda. *The Leadership Quarterly*. 2014;**251**(89). DOI: 10.1016/j.leaqua.2013.11.007
- [67] Chaleff I. Creating new ways of following. In: Riggio RE, Ira Chaleff I, Jean Lipman-Blumen J, editors. *The Art of Followership: How Great Followers Create Great Leaders and Organizations*. San Francisco: John Wiley & Sons; 2008. pp. 67-88
- [68] Kellerman B. *Followership: How Followers are Creating Change and Changing Leaders*. Boston: Harvard Business School Press; 2008. 336 p
- [69] Collinson D. Rethinking followership: A post-structuralist analysis of follower identities.

- The Leadership Quarterly. 2006;**172**:179-189. DOI: 10.1016/j.leaqua.2005.12.005
- [70] Lord RG, Brown BR. Leadership Processes and Follower Self-Identity. Hillsdale: Erlbaum; 2004. 264 p. DOI: 10.4324/9781410608864
- [71] Shamir B. From passive recipients to active coproducers: Followers' roles in the leadership process. In: Shamir B, Pillai R, Bligh MC, Uhl-Bien M, editors. Follower-Centered Perspectives on Leadership: A Tribute to the Memory of James R. Meindl. Greenwich: Information Age; 2007. p. ix-xxxix.
- [72] Kelley RE. In praise of followers. Harvard Business Review Case Services. 1988;**1**:1-8
- [73] Malakyan PG. Depersonalizing leadership and followership: The process of leadership and followership. World Journal of Social Science Research. 2015;**22**:227-250
- [74] DeRue DS. Adaptive leadership theory: Leading and following as a complex adaptive process. Research in Organizational Behavior. 2011;**31**:131. DOI: 10.1016/j.riob.2011.09.007
- [75] Burke PJ, Stets JE. Identity Theory. New York: Oxford University Press; 2009. p. 131
- [76] Stets JE, Burke PJ. The development of identity theory. Advances in Group Processes. 2014;**31**:57-97. DOI: 10.1108/S0882-614520140000031002
- [77] Collinson D. Dialectics of leadership. Human Relations. 2005;**58**:1419-1442. DOI: 10.1177/0018726705060902
- [78] Hollander EP. Leadership, followership, self, and others. The Leadership Quarterly. 1992;**31**:43-54. DOI: 10.1016/1048-9843(92)90005-Z
- [79] Lord RG, Brown DJ. Organization and Management Series. Leadership Processes and Follower Self-Identity. Mahwah: Lawrence Erlbaum Associates Publishers; 2004. 264 p
- [80] Rost J. Followership: An outmoded concept. In: Riggio RE, Chaleff I, Lipman-Blumen J, editors. The Warren Bennis Signature Series. The Art of Followership: How Great Followers Create Great Leaders and Organizations. San Francisco: Jossey-Bass; 2008. p. 53-64
- [81] Shamir B. Leadership research or post-leadership research: Advancing leadership research versus throwing out the baby with the bath water. In: Uhl-Bien M, Ospina S, editors. Advancing Relational Leadership Theory: A Dialogue among Perspectives. Charlotte: Information Age Publishers; 2012. pp. 477-500
- [82] Uhl-Bien M, Pillai R. The romance of leadership and the social construction of followership. In: Uhl-Bien M, Pillai R, Michelle C, Bligh MC, editors. Follower-Centered Perspectives on Leadership: A Tribute to the Memory of James R. Meindl. Greenwich: Information Age Publishers; 2007. pp. 187-209
- [83] Uhl-Bien M, Ospina SM, editors. Advancing, Relational Leadership Research: A Dialogue Among Perspectives. Charlotte: Information Age Publishing; 2012. 639 p
- [84] Crevani L, Lindgren M, Packendorff J. Leadership, not leaders: On the study of leadership as practices and interactions. Scandinavian Journal of Management. 2010;**26**:77-86. DOI: 10.1016/j.scaman.2009.12.003
- [85] Carsten MK, Uhl-Bien M, West BJ, Patera JL, McGregor R. Exploring social constructions of followership: A qualitative study. The Leadership

Quarterly. 2010;**213**:543-562. DOI:
 10.1016/j.leaqua.2010.03.015

173-180. DOI: 10.1016/j.
 leaqua.2016.02.001

[86] Harris A, Jones M, Baba S. Distributed leadership and digital collaborative learning: A synergistic relationship? British Journal of Educational Technology. 2013;**44**:929. DOI: 10.1111/bjet.12107

[94] Manz CC, Skaggs BC, Pearce CL, Wassenaar CL. Serving one another: Are shared and self leadership the keys to service sustainability? Journal of Organizational Behavior. 2015;**36**:607-612. DOI: 10.1002/job.1991

[87] Spillane JP. Distributed Leadership. San Francisco: John Wiley & Sons; 2012. 144 p

[95] Meuser JD, Gardner WL, Dinh JE, Hu J, Liden RC, Lord RG. A network analysis of leadership theory: The infancy of integration. Journal of Management. 2016;**42**:1374-1403. DOI: 10.1177/0149206316647099

[88] DeRue DS. Adaptive leadership theory: Leading and following as a complex adaptive process. Research in Organizational Behavior. 2011;**31**:125-150. DOI: 10.1016/j.riob.2011.09.007

[96] Palfrey J, Gasser U. Born Digital: Understanding the First Generation of Digital Natives. New York: Basic Books; 2008. 375 p

[89] Lord RG, Day DV, Zaccaro SJ, Avolio BJ, Eagly AH. Leadership in applied psychology: Three waves of theory and research. The Journal of Applied Psychology. 2017;**102**:444. DOI: 10.1037/apl0000089

[97] Friedrich TL, Vessey WB, Schuelke MJ, Ruark GA, Mumford MD. A Framework for understanding collective leadership: The selective utilization of leader and team expertise within networks. United States Army Research Institute for the Behavioral and Social Sciences. Technical Report 1288; 2011:933

[90] Pearce CL, Conger JA. All those years ago. In: Pearce CL, Conger JA, editors. Shared Leadership: Reframing the Hows and Whys of Leadership. Thousand Oaks: Sage Publications; 2003. pp. 1-18

[98] Yammarino FJ, Salas E, Serban A, Shirreffs K, Shuffler ML. Collectivistic leadership approaches: Putting the “we” in leadership science and practice. Industrial and Organizational Psychology. 2012;**54**:382-402. DOI: 10.1111/j.1754-9434.2012.01467.x

[91] Carte TA, Chidambaram L, Becker A. Emergent leadership in self-managed virtual teams. Group Decision and Negotiation. 2006;**15**:323-343. DOI: 10.1007/s10726-006-9045-7

[99] Goodchild MF, Guo H, Annoni A, Bian L, De Bie K, Campbell F, et al. Next-generation digital earth. Proceedings of the National Academy of Sciences. 2012;**109**:2811092. DOI: 10.1073/pnas.1202383109

[92] Carson JB, Tesluk PE, Marrone JA. Shared leadership in teams: An investigation of antecedent conditions and performance. The Academy of Management Journal. 2007;**50**:1217-1234. DOI: 10.5465/amj.2007.20159921

[100] Northouse PG. Leadership: Theory and Practice. Thousand Oaks: Sage Publications; 2019. 528 p

[93] Cullen-Lester KL, Yammarino FJ. Collective and network approaches to leadership: Special issue introduction. The Leadership Quarterly. 2016;**27**:

[101] Heifetz RA. Leadership without Easy Answers. Boston: Harvard University Press; 1998. 348 p

[102] Salkowitz R. Generation Blend: Managing across the Technology Age Gap. San Francisco: John Wiley & Sons; 2008. 272 p

[103] Chaudhuri S, Ghosh R. Reverse mentoring: A social exchange tool for keeping the boomers engaged and millennials committed. Human Resource Development Review. 2012;**11**:55-76. DOI: 10.1177/1534484311417562

[104] Kornelsen J. The quest to lead (with) millennials in a VUCA-world: Bridging the gap between generations. In: Jacobus KK, van den Heuvel SC, editors. Leading in a VUCA World: Integrating Leadership, Discernment and Spirituality. Cham, Switzerland: Springer; 2019. pp. 27-41

[105] Chou SY. Millennials in the workplace: A conceptual analysis of millennials' leadership and followership styles. International Journal of Human Resource Studies. 2012;**22**:71-83. DOI: 10.5296/ijhrs.v2i2.1568

[106] Howell JP, Bowen DE, Dorfman PW, Kerr S, Podsakoff PM. Substitutes for leadership: Effective alternatives to ineffective leadership. Organizational Dynamics. 1990;**19**:21-38. DOI: 10.1016/0090-2616(90)90046-R

[107] Kerr S, Jermier JM. Substitutes for leadership: Their meaning and measurement. Organizational Behavior and Human Performance. 1978;**22**:375-403. DOI: 10.1016/0030-5073(78)90023-5