



Leadership, a Soap Opera of Genes-Memes Interaction

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Abstract:

The drama of leadership evolved around its definition, what kind is wanted, what processes conduct it, what institutions channel through or around it, what values measure it, and what results test it. Leadership scholarship suggests the hypothesis of a soap opera of genes-memes interaction. The lens of metasyntesis was used on the literature. We used the biopsychosocial approach to include papers from animal and human literatures and from biology, psychology, and social sciences. We included in this review papers that were deemed most relevant. Papers were analyzed using visual methods. Leadership is an old topic with an ever-growing interest. Work on leadership has grown steadily from year to year. Since its emergence in pre-humans, leadership was imitated by humans, and adapted to

the development of societies. Leadership is a universal concept in animal and human literature. It was studied by more than twenty (20) academic disciplines. Anyone can become a leader if genes and memes offer him a morphological, physiological, or behavioral trait that increases his propensity to act first in coordination problems. Leading requires touching people's heads and hearts. To achieve this, the leader, like a scientist, craftsman, and artist, uses the fundamental human values that he packs into a project for the future. Leadership is an ability. This study offered an opportunity to visualize leadership. Experiments on leadership development will quantify the impact of mirroring.

Keywords: *leadership, soap opera, genes, memes, metasyntesis.*

Introduction

The drama of leadership (Starratt, 1993) evolved around its definition, what kind is wanted, what processes conduct it, what institutions channel through or around it, what values measure it, and what results test it (Burns, 1993). Thanks to a groundbreaking work, a consensus was achieved on its definition (House, Javidan, Hanges, & Dorfman, 2002). A titanic work advanced it (Nohria & Khurana, 2010), giving possibilities for doctoral courses and tenure track faculty positions. With the biology's entrance to the show (Arvey, Wang, Song, & Li, 2014; King, Johnson, & Van Vugt, 2009; King & Cowlshaw,

2009; De Neve, Mikhaylov, Dawes, Christakis, & Fowler, 2013 Feb; Song, et al., 2022 Mar), evolution, genes, environment, hormones, and neuroscience merge on its dance floor (Denhardt & Denhardt, 2006). Hence the hypothesis of leadership as a soap opera of genes-memes interaction.

Materials and Methods

The lens of metasyntesis (Beaucher & Jutras, 2007; Erwin, Brotherson, & Summers, 2011; Paterson, et al., 2009) was used on the literature.



Literature was identified from different sources. We used these reference books: Handbook of Leadership Theory and Practice (Nohria & Khurana, 2010), Out of crisis (Deming, 1982, reedited 2000), The New Economics for Industry, Government, Education (Deming, 1994), The dance of leadership: the art of leading in business, government, and society (Denhardt & Denhardt, 2006), Leadership Craft, Leadership Art (Taylor S. , 2012), The drama of leadership (Starratt, 1993), Managers Who Lead: A Handbook for Improving Health Services (Management Sciences for Health, 2005), and Leaders who govern (Rice, et al., 2015). We also searched PubMed and Google Scholar from their inception to July 2023 using the term “leadership”.

Einstein, the father of modern times (Bergia, 2017) and the person of the century (Golden, 1999), quoted by Stamatis (2011), once observed that you cannot solve problems with the same level of knowledge that created them. So, to do this work, we used the biopsychosocial approach (Engel, 1977; Engel, 1981) to include papers from animal and human literatures and from biology, psychology, and social sciences.

We included in this review papers that were deemed most relevant. A paper was considered relevant when its inclusion would advance scientific knowledge, influence practice guidelines and policy, or direct future research (Cummings, Browner, & Hulley, 2013) on leadership. Any paper judged irrelevant on this basis were not included.

Papers were analyzed using visual methods (Parmentier-Cajaiba & Cajaiba-Santana, 2020).

Results

A Universal Vintage

Leadership is an old topic with an ever-growing interest. Work on leadership has grown steadily from year to year. For example, PubMed database generated 89786 results from 1909 to 2023, with 2022 being the year with the highest number of publications (Figure 1). In the progression, there have been years of low interest with few publications.

Since its emergence in pre-humans, leadership was imitated by humans, and adapted to the development of societies (Figure 2).

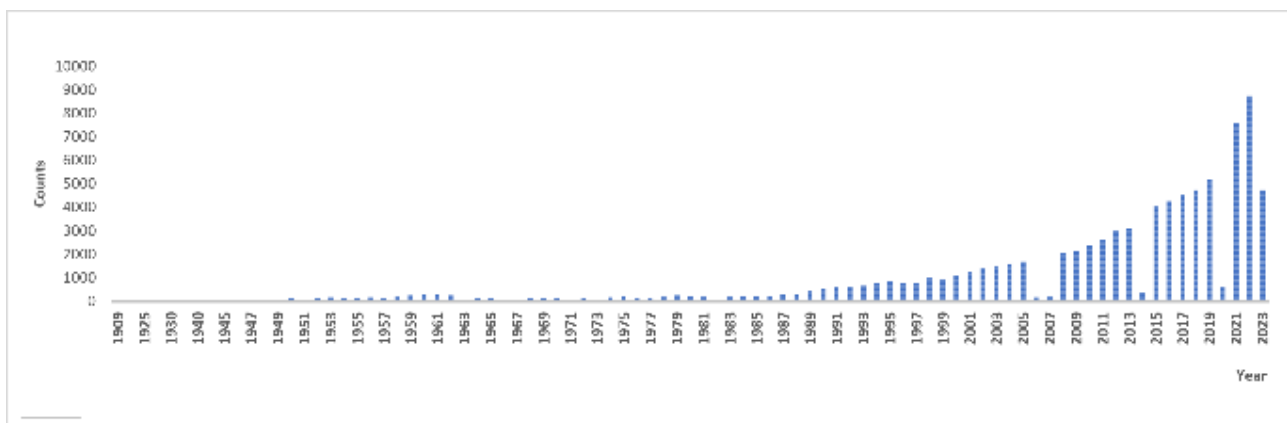


Figure 1. Timeline of Results Generated by PubMed on Leadership from 1909 to 2023

Source: This study

Leadership is a universal concept in animal and human literature. It was studied by more than twenty (20) academic disciplines: organizational science, psychology, sociology, economics, law, history, political science, biology, anthropology,

evolution, physics, cognitive sciences, neurosciences, statistics, computational sciences, military sciences, engineering sciences, medicine, public health, pharmacy, and sport (see appendix).

Image of the Masters

Anyone can become a leader if genes and memes offer him a morphological, physiological, or

behavioral trait that increases his propensity to act first in coordination problems (Figure 3).

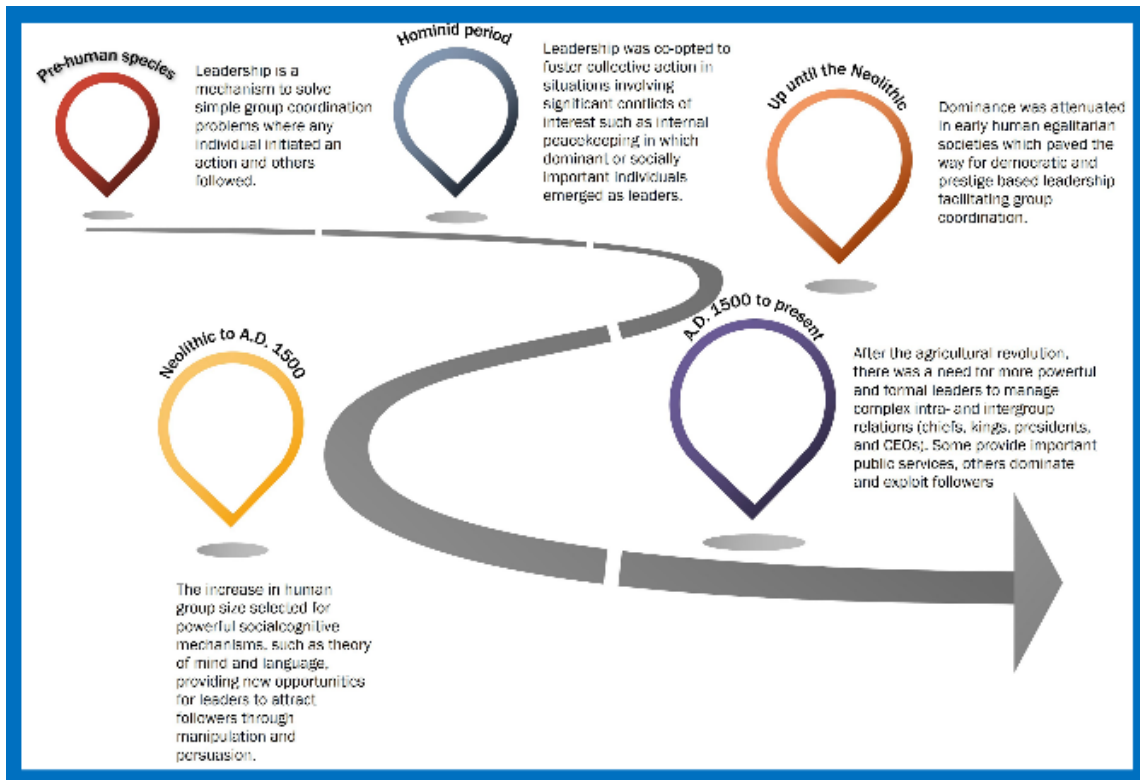


Figure 2. Five Major Transitions in the Evolution of Human Leadership

Source: This study

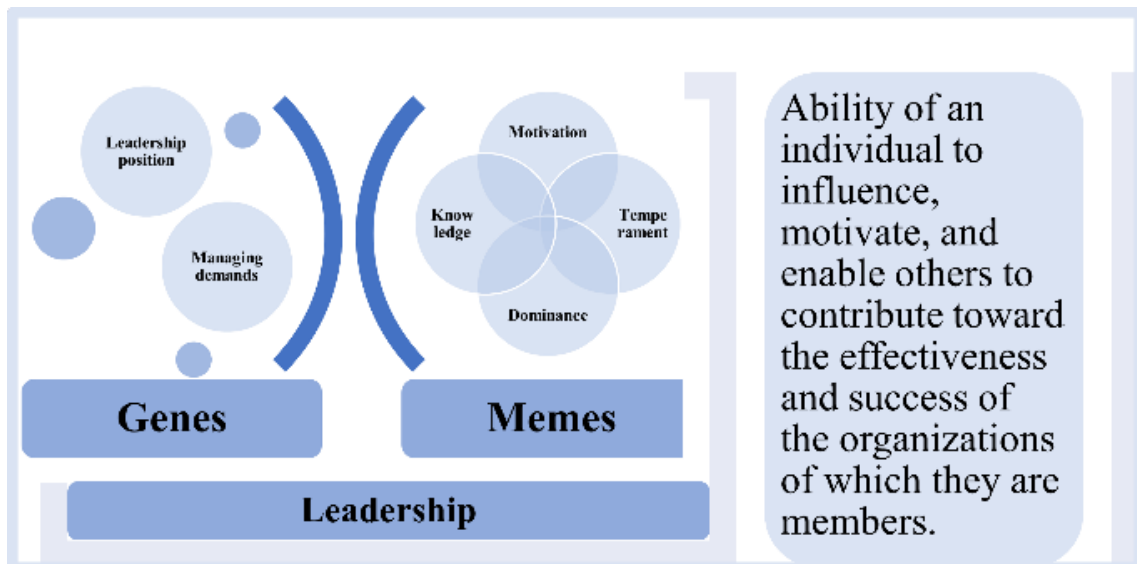


Figure 3. Leadership is the Image of Genes-Memes Interaction

Source: This study

The Trinity

Leading requires touching people's heads and hearts. To achieve this, the leader, like a scientist, craftsman, and artist (Figure 4), uses the

fundamental human values that he packs into a project for the future. He takes personal values to create an emotional bond with others and inspires them to take a new direction.

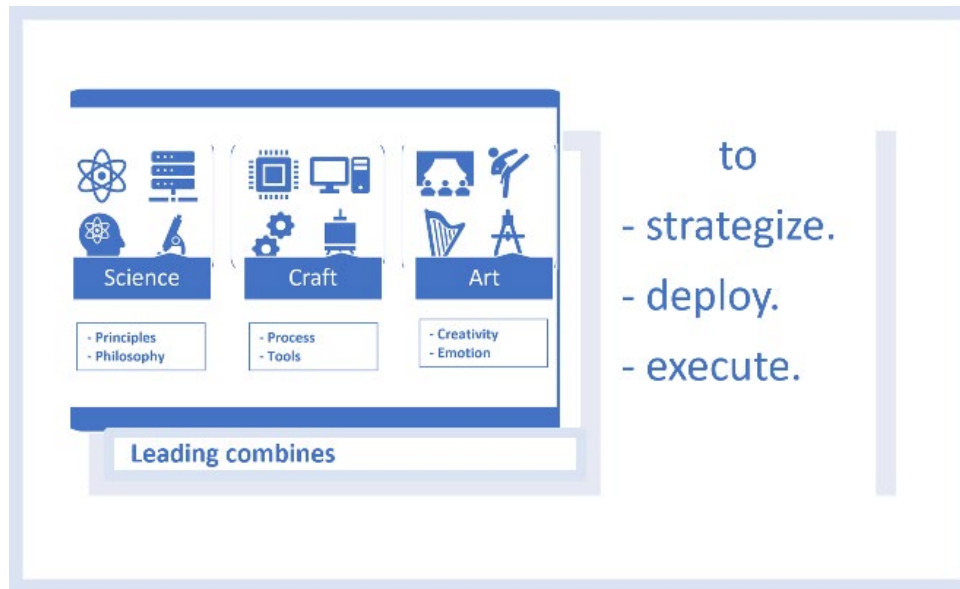


Figure 4. Leading Combines Science, Craft, and Art

Source: This study

Discussion

Leadership scholarship suggests the hypothesis of a soap opera of genes-memes interaction. This study found that leadership is an old and universal concept in animal and human literature with an ever-growing interest. Since its emergence in pre-humans, leadership was imitated by humans, and adapted to the development of societies. Anyone can become a leader if genes and memes offer him the possibility to act first in coordination problems. The study also found that the leader, like a scientist, craftsman, and artist, must touch people's heads and hearts.

Converging ideas and developments in the natural and social sciences suggest that leadership and the act of followership share common properties in humans and other animals, which point to ancient roots and evolutionary origins (King, Johnson, & Van

Vugt, 2009). The emergence of leadership is adapted to the specific problems of coordination encountered by human during his evolutionary history (Van Vugt, 2006). Leadership arises between leaders and followers to satisfy the need to adapt and compromise to maximize gains for survival (King, Johnson, & Van Vugt, 2009). Leadership roles are necessary for directing and planning 'followers', getting tasks done quickly, providing resources, etc. (Arvey, Wang, Song, & Li, 2014). Although there are phylogenetic consistencies between human and nonhuman leadership, the expansion of the human brain and the corresponding increase in human group size have created a unique selection environment for human leadership (King, Johnson, & Van Vugt, 2009). Leadership in human is a universal vintage, claiming authenticity for genuinely old concept and a marker of distinction (Fischer, 2015) from non-human.

Leadership position and managing demands are evidently genetically linked (De Neve, Mikhaylov, Dawes, Christakis, & Fowler, 2013 Feb; Song, et al., 2022 Mar). Among species, individuals are more likely to become leaders if they have a particular morphological, physiological, or behavioral trait that increases their propensity to act first in coordination problems (King, Johnson, & Van Vugt, 2009; Glynn & DeJordy, 2010). Among these, motivation, temperament, dominance, and knowledge are the guarantees. This motivation ranges from hunger (nutritional status) (Ward, Herbert-Read, Schaerf, & Seebacher, 2018; Nakayama, Harcourt, Johnstone, & Manica, 2012; Krause, Bumann, & Todt, 1992; Krause, 1993; Rands, Cowlshaw, Pettifor, Rowcliffe, & Johnstone, 2003) to the pursuit of a goal (King, Johnson, & Van Vugt, 2009). Leadership is strongly correlated with traits of ambition and autonomy (King, Johnson, & Van Vugt, 2009; King & Cowlshaw, 2009; Ward, Herbert-Read, Schaerf, & Seebacher, 2018). Extraversion is a temperament that is strongly correlated with the emergence of leadership. This trait, which is an indication of boldness, has a substantial hereditary component. Moreover, the most talkative member of a group often becomes the leader, independently of the quality of his contributions (babbling effect) (King, Johnson, & Van Vugt, 2009; Nakayama, Harcourt, Johnstone, & Manica, 2012). In species with dominance hierarchies, dominant individuals often assume leadership roles. Similarly, correlations between leadership and dominance are also present in humans, although dominance is usually measured in terms of social status rather than the outcome of agonistic interactions (King, Johnson, & Van Vugt, 2009; King & Cowlshaw, 2009). Having a unique education, skill, knowledge, information, or expertise increases an individual's likelihood of becoming a leader and attracting an enthusiastic audience (King, Johnson, & Van Vugt, 2009; King & Cowlshaw, 2009). In addition, speed, both in action and in learning, is decisive for emerging as a leader (Pettit, Akos, Vicsek, & Biro, 2015). These four traits have innated and learned elements. The learned elements are cultures, and their replicators are memes (Dawkins, 2006).

Just as genes spread through the gene pool by jumping from body to body via sperm or egg, memes spread through the meme pool by jumping from brain to brain in a process that can be broadly called imitation (Dawkins, 2006). Imitation is the result of mirroring, a phenomenon carried out by mirror neurons. (Purves, et al., 2015; Breedlove, Rosenzweig, & Watson, 2012). Genes are the first replicator; memes the second replicator that emerged when human ancestors became capable of imitating sounds and actions (Blackmore, 2019). It doesn't matter if he is born or made, leaders are the image of genes-memes interaction.

To effect change, the leader must continually establish connections. The leader works with others to come up with good ideas on how things should be done; communicates in an objectively compelling manner to trigger, stimulate or elicit an emotional response from potential followers to become engaged and active; and shapes and gives direction to the energy that people have and that which is constantly exchanged between and among people (Denhardt & Denhardt, 2006). The language of leadership is characterized above all by using images, symbols, and metaphors (Denhardt & Denhardt, 2006). It is only when people are moved emotionally that they will begin to move psychologically and physically (Denhardt & Denhardt, 2006).

The leader touches people's heads and hearts by telling the story of a better future through public narrative (Ganz, 2010). This is a matter of science, craft, and art.

This description of leadership theory and practice is comparable to a soap opera. Soap opera is a media coverage of real events whose nature is to extend over a certain period of time, to generate in this interval a suspense or a lasting curiosity in the face of an enigma, and possibly welcome surprising twists (Baroni, 2016). Soap operas are media events which punctuate the flow of information, organize temporality by drawing the outlines of stories whose coherence gradually emerges and sometimes leads to a closure that makes it possible to “turn a page in history” (Baroni, 2016).

Visual representation of data is an essential element of scientific discourse. Visual maps are a way of visually representing qualitative data to improve rigor and analysis and displaying the invisible (Parmentier-Cajaiba & Cajaiba-Santana, 2020). Images are engagement magnets (Tornabene, Nowak, & Vogelsang, 2018). This review used visual maps to tell the story of leadership as a soap opera of genes-memes interaction.

Conclusion

Leadership is an ability, and its scholarship suggests the hypothesis of a soap opera of genes-memes interaction. This study meta-synthesized the literature to offer an opportunity to visualize leadership. From this study, it is clear that it doesn't matter if one is born or made, leaders are the image of genes-memes interaction. Experiments on leadership development will quantify the impact of mirroring.

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Appendix

Table 1. Leadership as described by different disciplines

Discipline	Definition of leadership	What leaders do
Science of Organizations ¹	Interaction between two or more members of a group that often involves structuring or restructuring the situation as well as the perceptions and expectations of the members.	Be agent of change. Change the motivation or skills of other group members. Significantly influence the thinking, behaviors and/or feelings of others.
Psychology ²	Process of motivating people to work together collaboratively to accomplish “great things”; these “great things” being defined in the mind of the leader and his followers.	Diagnose the situation in a clever way. Influence disciples to change their behaviors within groups to accomplish the “big things” decided together.
Psychology ³	Understanding how people and organizations behave, creating and strengthening relationships and meaning, enhancing commitment, establishing group identity, and adapting behavior to increase effectiveness.	Be true merchant of hope by addressing the collective imagination of followers, co-opting them to join him in a great adventure. Get the best out of people by inspiring them to overcome their selfish personal motivations (to transcend themselves). Make a difference whatever the context.
Sociology ⁴	a) Transmitting meaning, subjugating, and dominating to achieve performance. b) A leader is one or more people who select(s), equip(s), train(es) and influence(s) one or more followers who have (have) diverse gifts, abilities and skills; and which focuses the follower(s) on the mission and goals of the organization causing him or her to willingly and enthusiastically expend spiritual, emotional and physical energies in a concerted and coordinated effort to achieve organizational mission and goals.	Be an agent of change. Design the vision and goals. Communicate and convey meaning. Plan, select, equip, train and influence; Organize and allocate resources, build the dominance structure, model appropriate behavior, coordinate activities. Govern, support, and develop staff. Monitor and evaluate. Lead people to willingly and enthusiastically expend spiritual, emotional, and physical energies in a concerted and coordinated effort to achieve organizational mission and goals.
Economics ⁵	Creating opportunity from a seemingly intractable environment that, if left to its own resolve, limits people to a lower equilibrium. To overcome this suboptimal outcome, the leader reconceptualizes a one-time prisoner's dilemma game in an endlessly repeated setting.	Have a vision that attracts. Communicate the vision persuasively. Recruit people around the vision. Commit and engage people to give the best of themselves for the achievement of the vision. Maintain integrity with the vision. Have an authentic character and be true to yourself.
History ⁶	Creative-destructive process carried out both by individual agents and by those who work in companies.	Manage staff; Coordinate resources; and above all Initiate change.
Political science ⁷	Social relationship with three key components: leaders, followers, and the contexts in which they interact. Leaders are those who help a group create and achieve shared goals.	Impose or derive objectives from the group through power. Mobilize people to achieve these goals
Biology ⁸	Initiation of new directions of locomotion by one or more individuals, which are then easily followed by other members of the group.	Quickly acquire the right information. Create a vision. Recruit followers and distribute leadership. Synchronize group activity and convey desires or requests through communication signals such as oral and facial expressions, gestures, rituals, emotion, and other complex language. Institutionalize cooperation and coordinate activities. Initiate a group action but also motivate, plan, organize, direct, control and punish to carry out the group action. To be

		a democrat or a despot, front or back. Manipulate, persuade, dominate, and exploit to achieve the vision.
Anthropology ⁹	System of social relations involving authority, charisma, or other forms of personal or institutional power, but whose rules are specific and integrated into a particular cultural context.	Use authority, charisma, and other forms of personal or institutional power in a particular cultural context.
Evolution ¹⁰	Process of influencing to achieve common goals.	Quickly analyze the situation and decide. Take the initiative and lead the way. Influence and persuade others to follow him. Organize the group and coordinate efforts. Maintain group cohesion.
Physics ¹¹	To achieve harmony in one's field of influence through the energy generated by the centripetal force of one's authority and allow competitiveness to flourish.	Change people's behavior; Lead by example; Motivate and inspire; Innovate and achieve harmony by following the right path.
Cognitive science ¹²	Significantly affecting the thoughts, feelings, and behavior of a significant number of people.	Shape stories. Listen to people's needs. Develop as a leader. Be exemplary. Be reassuring and energizing for others.
Neuroscience ¹³	A natural human process for getting things done, leadership is about inspiring others, helping organizations transcend their limitations, and guiding companies toward high and beneficial goals.	Take risks and commit to organizing and leading. Set constantly new goals for the group and strategically planning how to achieve them. Communicate, engage others, and guide their behaviors. Inspire people to do great things for themselves. Assist, motivate and care for the well-being of others. Influencing and persuading others. Celebrate successes.
Statistics ¹⁴	Accomplish the transformation of an organization thanks to his knowledge, his personality, and his persuasive power.	Create the direction to take. Communicate direction. Positioning people for success. Motivate people to do things right.
Mathematics and Computational Science ¹⁵	The aspects of interactions between agents that catalyze changes to the local rules defining the interactions of other agents. The leader is an individual who has an asymmetrical potential that can influence the trajectory of the agents in the group. Process information about success or failure in the environment and translate it into structural changes in the network of influence between agents.	Influence or recruit followers by providing an engaging set of choices, tasks, and resources that are embraced by followers.
Arts ¹⁶	Ability to 'energize', by touching emotions, so that people are touched and moved, and to animate in the pursuit of a better future in which problems are resolved, progress towards important goals is made, and that in which the human condition is improved. Ability to be a successful entrepreneur, i.e. a tactical strategist capable of mastering the management tools allowing him to personally monitor his profitability and properly finance his development. Work with others to come up with good ideas for how things should be done; Communicate in an objectively compelling way to trigger, stimulate, or elicit an emotional response from potential followers to become engaged and active; To shape and give direction to the energy that people have and that which is constantly exchanged between and among people.	Work with others to come up with good ideas for how things should be done; Communicate in an objectively compelling way to trigger, stimulate, or elicit an emotional response from potential followers to become engaged and active; To shape and give direction to the energy that people have and that which is constantly exchanged between and among people. Adapt to change to take the lead. Mobilize those around him. Personally master some notions of financial management.
Military Science ¹⁷	The process of influencing people by providing purpose, direction, and motivation while working to accomplish the mission and improving the organization.	Influence (decide, communicate those decisions and motivate people). Make it work (the things you do to accomplish the immediate mission of your organization). Improve (things you do to increase the

		organization's ability to perform current tasks or future missions).
Engineering Sciences ¹⁸	Technical direction of change based on the innovative design, creation, implementation of new products/ processes/projects/materials/molecules/software/ systems, supported by the invention of enabling technologies, to meet the customer and societal needs. It is a process of interpersonal influence of setting direction and inspiring others to achieve goals.	Have leadership attitudes. Establish and maintain relationships with others. Make sense of the context. Create the vision. Realize the vision. Communicate; develop people (self and others); judging and making decisions; leading and managing others; managing change; self-manage; focus on service; do strategic and operational planning; work in a team and build relationships.
Pharmacy ¹⁹	Capacity to inspire or lead others.	Be a role model. Be a mentor. Motivate staff. Monitor operations daily. Multiply success by replicating future leaders.
Sport ²⁰	Ability of individuals to influence, motivate and enable others to contribute to the success of the organization of which they are members.	Build a team. Manage talent. Help define reality for others. Interpret actions, give meaning and perspective to events. Forging the meanings that form the foundation of organizational culture. Motivate those working in the organization.
Medicine ²¹	Setting a direction and motivating others to follow it.	Define the future, align people with a vision, and remove barriers to enable people to achieve that vision.
Public Health ²²	Help others recognize and address challenges.	Be master of oneself. Broaden your vision. Create a shared vision. Clarify purpose and priorities. Communicate effectively. Motivate teams to engage. Resolve conflicts. Lead the change.

1. (Glynn & DeJordy, 2010)
2. (Chatman & Kennedy, 2010)
3. (Kets de Vries & Engellau, 2010)
4. a) (Guillén, 2010) ; b) (Slater R., 1995)
5. (Zupan, 2010; Bolton, Brunnermeier, & Veldkamp, 2010)
6. (Friedman, 2010)
7. (Nye, 2010)
8. (Dyer, Johansson, Helbing, Couzin, & Krause, 2009; Krause, Hoare, Krause, Hemelrijk, & Rubenstein, 2000; Pettit, Akos, Vicsek, & Biro, 2015; King, Johnson, & Van Vugt, 2009; Couzin, Krause, Franks, & Levin, 2005; Nakayama, Harcourt, Johnstone, & Manica, 2012; Herbert-Read, 2015; Pettit, Akos, Vicsek, & Biro, 2015)
9. (Shore, 2014)
10. (Van Vugt, 2006)
11. Proposé à partir de (Perc, et al., 2017; Shrapnel, 2017; Hennessey, 2015; Tobak, 2012; Ambler, 2012)
12. (Gardner & Laskin, 1995)
13. (Schwartz, Thomson, & Kleiner, 2016; Hiebert, 2014; Zhe & Yazdanifard, 2015; Berreby, 2010)
14. (Snee & Hoerl, 2004; Deming, 1994)
15. (Hazy, 2008; Garland, Berdahl, Sun, & Bollt, 2018)

16. (Denhardt & Denhardt, 2006; Papin, 2006)
17. (The Center for Army Leadership, 2004; Sewell, 2009)
18. (The Bernard M. Gordon-MIT Engineering Leadership Program, 2011; Paul & Falls, 2015; Bennett & Millam, 2012; Engineers Canada, 2015; Oplinger, Lande, Jordan, & Camarena, 2016; Farr & Brazil, 2009)
19. (Desselle & Zgarrick, 2009, pp. 21, 236)
20. (House, Javidan, Hanges, & Dorfman, 2002; Bridgewater, 2010)
21. (Health Careers, 2019; Institute of Medicine, 2004; Chen, 2018; Warren & Carnall, 2011; NHS Institute for Innovation and Improvement and Academy of Medical Royal Colleges, 2010; West, et al., 2015; Young, 2003)
22. (Management Sciences for Health, 2006)