Chapter 1

Introduction and Conceptual Framing—Transformation Literacy as a Future-Making Skill

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Abstract This chapter introduces the term transformation literacy as an urgently required skill for decision-makers and change agents. It suggests that transformation literacy is the knowledge and capacity of collectives of individual and institutional actors to steward sustainability transformations effectively together across institutions, societal sectors and nations. This includes the human capacity to collectively identify and shift dysfunctional patterns of societal and human-to-nature interaction at local and global scales. The chapter summarizes why transformation efforts are needed to not only achieve the vision of a sustainable world at all scales, but also to charter pathways towards regenerative civilizations. It briefly analyses the current failing systems and suggests that there is a need to build societal structures and institutional systems that have systems aliveness as its core value. It explores the role of future narratives of *emergency*, which currently dominate the discourse around the climate crisis, and narratives of *emergence* that are increasingly used in the niches of pioneering new approaches to regenerative civilizations. The chapter suggests to deepen knowledge and practice in the three levels of transformation literacy: mindset shifts, systems understanding and process competence. It concludes with an overview how these three levels of transformation literacy inform the three parts of the book.

Keywords Transformation literacy · Regenerative civilizations · Future narratives · Mindset shifts · Systems understanding · Process competence · Life-support systems · Planetary boundaries · Collective stewardship · Transformative change

The recent years have seen the increasing use of a term in the context of the multiple crisis of climate change, biodiversity loss and global health challenges: it is the word *transformation*. In the way, it is being used, *transformation* refers to planned change endeavours that involve deeply innovative approaches towards thinking and acting, and that question as well as shift power structures and relationships. Hence, the term is used in the assumption that positive transformations in the sense of future,

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more sustainable states of the world are possible, and human behaviours can change to support such a future at a collective scale. Transformation is seen as a doorway to fundamentally alter the way humankind operates with each other and the planet Earth in the Era of the Anthropocene. Closely related to the increasing use of the term transformation is the acknowledgment of the climate crisis as an existential threat to humanity and the planet. Terms such as “Hothouse Earth” (Steffen et al., 2018) and “Planetary Boundaries” (Rockström et al., 2009a, b) originated in scientific warnings, but have since moved into the vocabulary of non-academic actors such as politicians, CEOs, or activists. For a long period of time, which is more than 10,000 years, humanity’s civilizational paths have occurred because of our planet’s remarkable climate stability and ability to regenerate. But it is the great acceleration happening in the last 70 years that the progress of human civilization has started to endanger the very life-support system that it has emerged from. Moreover, the environmental impact of human economic activities coupled with population growth and interventions in natural systems have seriously endangered the resilience of the planet, hence the capacity of nature’s complex system of regeneration. Increasingly, humankind’s behavioural patterns of production and consumption, driven by a paradigm of economic growth have undermined the inherent balance naturally built into planetary life-support systems. That, which many people tended to always take for granted—clean air, water to drink from, fertile soil and weather that may be unpredictable, but can be adapted to—is severely endangered. Scientists predict that global warming will begin to trigger tipping points that accelerate the path of destabilization, and that urgent and global action is required to not prevent, but mitigate the predicted changes (Steffen et al., 2007, 2018). Among many major interventions needed is the stabilization of global warming at 1.5° or less, the massive reduction of carbon emissions in a very short period of time, the accelerated protection of biodiversity, and re-creating conditions that re-enable the functional carbon storage in soils, forests and oceans. Hence, the twenty-first century’s major theme will be about bringing human agency for a responsible Anthropocene centre stage and building narratives of possibilities that enable local to global collective action. These may take different forms, even if united under similar purposes. Hence, used more appropriately in its plural form, *transformations* are the many different and complementary processes orchestrated by humankind through which this new way of operating is brought into reality, durability, scale and impact (Kuenkel, 2019). Transformations—in this understanding—require bold decisions—by global actors, national governments, business owners, civil society organizations, and citizens. Moreover, it requires people’s ability to implement these bold decisions. It means unleashing the human potential to collectively effect change for a better life for all species.

1.1 What is Transformation Literacy

The scientific warnings of human behaviour have a long tradition. Many predictions of life-threatening scenarios for the future of our world have been published (e.g., Guilding, 2011; Meadows et al., 1972) in the last century with the foreseeable emerging dominance of the industrial and post-industrial age. Yet, they have been fiercely criticized and largely ignored, as if anything that could stand in the way of modern human economic expansion was to be overcome as outdated thoughts, or wrong predictions. It took until the beginning of the twenty-first century, when the voices of caution began to get louder. A growing global movement, increasingly supported by scientists, declared in various forms that the continuation of environmental degradation and unbalanced economic growth would severely endanger humankind's place and possibilities on planet Earth. The emerging more widespread awareness of the need for stewarding humankind towards civilizations that foster wellbeing on a healthy planet was also the foundation for the lengthy negotiation process around the 17 Sustainable Development Goals (SDGs). While transformation experts may criticize that the Global Goals agreed in 2015 are not transformative enough, it is widely acknowledged that they are historic in their intention—the first time in history that a global agreement exists that there is a need to manage evolutionary change in a spirit of collective responsibility (SDGs, 2017). While the SDGs may not solve all global challenges, they have become an inspiration for strategic planning and implementation of nation-based societal change, but also change efforts in organizations. Moreover, they helped to establish a new perspective—one that takes the global interconnectedness of humankind seriously and—aggravated by the climate crisis—acknowledges Planet Earth as a new reference point for care and responsibility. Planetary thinking is certainly not new in the history of humankind, but the use of the term planet has more than doubled in the last 20 years, which can be taken as an indicator for a shift in perspective. The question remains what acting responsibly for planet and humankind means for different actors and in different places of the world. This is where the concept of *transformation literacy* is paramount. ***Transformation literacy is the knowledge and capacity of collectives of decision-makers, change agents and institutional actors to steward sustainability transformations effectively together across institutions, societal sectors and nations*** (Kuenkel, 2019). It rests on people's ability to collaborate or act in complementarity and refers to multiple actors in multiple places that can hardly be coordinated, yet need to find local solutions to global challenges, or drive global turning points that support local changes. For example, while there is a growing understanding that the industrial agriculture is not only incapable of offering the necessary carbon storage functionality, approaches to regenerative agriculture need to be culturally and locally adapted, and combined with ecosystem restorations in different ways. Or a future-proof renewable energy mix might require different technological infrastructure in different parts of the world. Naturally, the pathways to transformations need to be pluralistic and mutually supportive rather than competitive. Understanding the geo-bio-physical boundaries, or the safe operating space, within which humankind can

live on this planet well without endangering the delicate overall planetary system, is certainly the underlying guidance for future action. However, for transformations to happen at scale, this is not enough. They require more widespread fundamental shifts in the awareness about humankind's relationship with nature and the essential acknowledgment of the need for the dignity of all people. The current planetary threats suggest to collectively redefine what it means to be humane on this planet, and what a responsible Anthropocene could look like. Finding pathways to regenerative civilizations is certainly an administrative task by existing forms of governance and institutional structures that have emerged as part of the paradigm of modernity. But without redirecting the focus of political and institutional action, we may not be fast enough to implement the change in behaviour. Transformations may partly require technological innovation, partly administrative rigour and partly the reconnection with ancient, traditional or indigenous knowledge—a remembrance that a narrative of interconnectedness of all planetary life has accompanied humankind for a long time and seems to have gone lost only in the recent history. Such narratives are an essential ingredient of *transformation literacy*—they help to knit the new approaches into the existing structures, amplify future-proof pathways that already exist and connect actors with each other to scale impact, often through modern communication technologies.

1.2 Narratives of Emergency and Emergence

The first decades of the twenty-first century have seen the rise of multiple local and global initiatives, projects and movements that take the prospects of a regenerative civilization to heart. They are still at the margins of the overall detrimental operating system of human impact on the planet, but the underlying narratives of both urgency and possibilities have found their ways into the minds and hearts of (not enough, but) many decision-makers. The 2021 recent return of the USA to the Paris agreement, the renewed and sharpened EU emission reduction targets and the declaration of China to become climate neutral latest by 2060 are just a few examples that show that the call to transform the world is headed, even though the details of how to do this are far from being agreed.¹ Yet, a shift in thinking often precedes change in action. This process is fostered by collective narratives, which help people to connect and emotionally engage with a different future. Two complementary forms of narratives have been emerging together in the last decade.

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¹ It is notable that in the years 2020 and 2021 countries or regions like the European Union, China and finally the United States have redefined reduction targets: In December 2020, the EU submitted the stronger emissions target of at least 55% net reduction below 1990 levels to the UNFCCC. During the same period, China proposed updated targets, which are still to be officially submitted, implying to lower carbon intensity by over 65% in 2030 compared to 2005 levels and the net-zero before 2060. In April 2021, the US announced a strengthened Paris Agreement target of 50–52% below 2005 by 2030. Source (accessed on 07th May 2021): <https://climateactiontracker.org/climate-target-update-tracker/>.

The first is a narrative of **emergency**, evidenced in the frequent use of terms such as climate emergency or more recently planetary emergency in which the scientifically predicted threats and the actual experience of such predictions such as extreme weather events, ocean level rising or droughts, accelerate substantiated *anxiety* which leads to taking more responsible decision, both individually and collectively. Communication around this narrative highlights the threats (e.g., global warming, species extinction, increased migration or water wars) and the need for immediate action by decision-makers and institutional power to control human behaviour in order to mitigate the risks for future generations. Many scientists and activists have argued since long argue much louder recently that the speed at which this change in action takes place, is much too slow for the threats ahead. In the scientific realm, this is the dominant narrative, and has a long history, exemplified by publications such as the Club of Rome report, ‘Limits to Growth’ (Meadows et al., 1972) and its updates (Meadows et al., 1992, 2004); the concept of peak resources and corresponding effect on the global economy (Heinberg, 2001, 2005, 2011; Sverdrup & Ragnarsdottir, 2014); the concept of a ‘safe operating space for humanity to thrive’ in the context of avoiding further transgression of the biophysical planetary boundaries (Cornell, 2012; Rockström et al., 2009a, b); the image of ‘Hothouse Earth’ (Steffen et al., 2018); the declaration of a ‘Planetary Emergency’ (Club of Rome, 2020); the warning by more than 100 scientist of a ‘climate emergency’ (Ripple et al., 2020); the outlining of a 10 point action plan for a circular bioeconomy for sustainable well-being (Palahi et al., 2020); and the emphasis on a ‘global crisis’ (Dasgupta, 2021). The *emergency narrative* leads to concrete suggestions around decisions and actions by governments, institutions and corporations. While varying in details, they show obvious commonalities in solutions such as protecting critical land and ocean ecosystems, ending deforestation and restoring wetlands; moving from fossil fuel extraction to renewable energies at scale; accelerating policy decisions towards carbon reduction targets; and shift from industrialized to agroecology or regenerative agriculture. The *emergency narrative* assumes that the operating system of humankind can be improved while using the existing institutional and political structures. Enhancing *transformation literacy* for implementing pathways to a regenerative civilization here means to foster the ability of institutional actors and political governance to decide, orchestrate and implement these solutions at scale.

The *second* narrative can be seen as one of **emergence** (Preiser et al., 2020). It has grown in the last decade more prominently around pathways to different futures that acknowledge the possibility of wellbeing on a healthy planet (Costanza et al., 2016). It is a narrative that emphasizes the human potential, the ability to cocreate future more consciously and, above all, the role of planetary care-taking as the likely route to Anthropocene responsibility. Communication around this narrative highlights already existing good practices, the role of social innovations, the need for guidance of technological innovations and the human capability to change trajectories. It is a narrative of possibilities and of inventing a different future in an interconnected world, while acknowledging that there will be plural futures and multiple pathways to enacting them. The *emergence narrative* is naturally complex, less directive and open to fundamental, if not revolutionary shifts. It is a narrative of learning

societies that are capable to adapt and also has a long history already. Scientific examples of the *emergence narrative* are the human responsibility to ‘further life-enhancing structures and patterns’ in the Potsdam Manifesto (Dürr et al., 2005); the concept of an ‘Earth Community’ (Korten, 2007); the ‘wellbeing’ approach (OECD [Organisation for Economic Co-operation and Development], 2015); the concept of the ‘regenerative economy’ (Fullerton, 2015); the concept of ‘Earthland’ (Raskin, 2016); the B-Team’s ‘Great Transformation’ approach,² the ‘Meadows Memorandum’ (Leading4Wellbeing, 2017); or the concept of pluraversality (Preiser et al., 2020).

Emergence narratives often emphasize the need to fundamentally shift the operating system of human action on the planet, call for reconstructing a more just global society and a redefinition of purpose of the economy to recalibrate its essential principles in line with planetary life-support systems. Many authors have suggested approaches to new forms of economy that not only address the fundamental role of humans in the Anthropocene as responsible actors within the framework of planetary boundaries, but also make concrete proposals for their implementation (Bergsteiner & Dharmapiya, 2016; Bollier & Helfrich, 2012; Ellen Macarthur Foundation, 2013; Felber, 2018; Fioramonti, 2017; Folbre, 1995; Jacobsen, 2020; Lovins et al., 2018; Magnuson, 2007; Raworth, 2018). Hence, the emergence narrative is not only multi-faceted and complex, but assumes that the transition to regenerative civilizations is possible. Enhancing *transformation literacy* means to connect people with the vision of regenerative civilizations and foster the ability of multiple actors from local to global level to radically change the way they operate. This may at times be incremental: in the dissemination of emotionally compelling future narratives, and the powerful connection of movements, initiatives and pathways. But it also includes scaling people’s ability to design and implement transformative change processes that model the future way of operating.

1.3 Levels of Transformation Literacy

This book acknowledges the importance of both above-described *narratives of emergency and emergence* and their complementarity in accelerating pathways to transformations. It takes note of the fact that, not only accelerated by shifts in thinking caused by the global COVID-19 pandemic, these two narratives are coming closer together. Yet, we also acknowledge that the trend to merge these two narratives at this early stage of global transformation processes may simply become a superficial integration of the *emergence narrative* into the solution-oriented *emergency narrative*—with no fundamental shift in the thinking that underpins the current global operating system of humankind. This may fall short of the depth and wisdom that lies in the fundamental questioning of our ways of thinking and operating, our ability to reconnect with our essential human capability to partner with life processes and our

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² Source accessed on 15th April 2017: <http://bteam.org/>.

potential to steward transformations that model aspects of future regenerative civilizations. This book therefore approaches transformation literacy in its multi-faceted dimensions. It pauses the urgent call for immediate solutions and takes a deep dive into key leverage points for *transformation literacy*. If transformation literacy is, as defined above, the capability of collectives of actors to steward transformative pathways more consciously and more successfully, it requires knowledge, collective learning and expertise building at three levels. What are the three levels and why are they so important?

The *first* level is that of mindsets. Unleashing the potential of human agency in stewarding transformations at various levels requires the adoption of mindsets that acknowledge the intrinsic relationship between people and nature (or the acceptance that we are part of nature, part of this planet). Subsequently, in the era of the Anthropocene, where human impact has begun to dangerously alter the planetary life-support system, it is the acceptance of a human responsibility to safeguard the future integrity of our planet. The question is: how can we help mindsets develop towards a meta-modernity, in which ancient human worldviews with reverence for Mother Earth integrate with post-industrial rational worldviews that traditionally separate humans from nature. How can we support what will become a paradigm shift in the operating system of humankind? Meadows (1999) suggested that successful large-scale change works best when paradigms that hold an outdated way of operating in place, shift towards new paradigms that underpin a new narrative. She reminds us that “paradigms are sources of systems. From them, from shared social agreements about the nature of reality, come system goals and information flows” (Meadows, 1999, p. 18). The way people perceive the *nature of reality* influences their feeling, thinking and acting. A mindset shift, hence, a shift in the way reality is perceived, is the cornerstone of *transformation literacy*. There may be very different connotations, manifestations or expressions of such underlying worldviews. They can stem from traditional cultures, transcended insights into the nature of life or scientifically substantiated data that suggest that the way we know the world needs to fundamentally change. Mindsets give rise to stories about the world, and they inform collective action. They are the foundations for narratives. Opening up to mindsets of interconnectedness and relational co-construction is a prerequisite for the kind of transformation literacy this book supports. Table 1.1 shows the three levels of knowledge and skills building for transformation literacy.

The *second* level is that of systems. A systemic perspective that views the world as an interconnected system in constant interaction and highly interdependent has been the mainstream worldview in ancient times, often intrinsically linked to spiritual beliefs, and is, even today, a worldview of the many still existing indigenous cultures. In modern science, however, such a view has emerged only slowly over centuries in the niches of a mechanistic or Newtonian worldview that saw the universe as a machine-like entity to be controlled and exploited. While the famous Alexander von Humboldt with his—at least in Europe and the Americas, widely known writings, was already in the eighteenth century fascinated by the systemic integrity of ecology, actual system theory as a scientific approach only began to take root only at the beginning of the last century (Capra & Luisi, 2014; Mele et al., 2010). The progress in

Table 1.1 Levels of knowledge and expertise required for transformation literacy (adapted from Kuenkel et al., 2020, copyright by the author)

Mindset	An understanding of the world’s complex interconnectedness and relational co-construction, in which human agency acknowledges its co-evolutionary pathways with each other and the Earth
System	An understanding of future systems that build regenerative civilizations and safeguard life support systems in their political, social and economic aspects
Process	An understanding of the processes required to bring about transformations, hence the collective competence to design and implement effective large-scale transformative change processes at multiple levels with multiple stakeholders

psychology, biology, ecology and quantum physics had led to the insight that living systems are organisms as interactive networks. This suggested the focus on matter and structure required to be complemented by a better understanding of process, patterns, organizations and relationships. Hence, scientific inquiry shifted from the parts to the whole (Capra & Luisi, 2014; Checkland & Holwell, 1998; Jackson, 2003; Weinberg, 2001) and the focus on duality (classical Newtonian physics) shifted to non-duality (quantum physics—Bohr and Heisenberg) (e.g., Bohr, 1913). Very different streams of systems theory have emerged, they partly diverted and partly integrated various scientific disciplines. With the advent of the sustainability discourse at the end of the last century, a systemic view of the world, substantiated by science that predicted global warming, and showed the global interdependencies of evolutionary phenomena, has moved to the forefront of many scholars, certainly activists and sustainability practitioners. It seems that the paradigm shift, Donella Meadows suggested as a prerequisite for systems change, is underway (Meadows, 1999). But it is not yet the mainstream view of the world, even though it has moved towards the centre of different scholarly discourses, for example around Earth governance, agroecology, ecosystems resilience, climate adaptation and mitigation, planetary boundaries and life-support systems. As Bai et al., (2016, p. 360) suggest it is the realization, in many instances now the actual experience of human-induced climate change, that “the Anthropocene is changing the co-evolutionary pattern between humans and the environment—from an emphasis on local interaction to a coevolution of humanity and the planet as a whole.” Understanding a systemic view, not only of the world as a whole, but in various transformative change efforts, the adjacent next level systems view that needs to be taking into account, is paramount for *transformation literacy*. This includes the discourse about how regenerative future can look like. How can we support the emergence of a plurality of futures that exhibit characteristics of regenerative civilizations? A systems view suggests the ability to hold complexity, farewell the need for deterministic pathways into the future and invite the exploration of multiple different trajectories.

The *third* level is that of process competence as an often-neglected capacity of actors to actually orchestrate and implement successful transformative change processes. The knowledge of effective approaches in organizational and societal change processes has been growing since the end of the last century, including concepts such as organizational learning and learning societies, particularly by practitioners that had adopted a systemic view of the world (e.g., Jaworski, 1996; Laloux, 2014; Senge et al., 2015; Wheatley, 1999). But only more recently, with the growing awareness of the need for transformative change at scale, a better understanding of the dynamics and the orchestration of societal and global change process has received more attention (Goepel, 2016; Kuenkel, 2019; Kuenkel & Waddock, 2019; Kuenkel et al., 2020; Loorbach et al., 2016; Rotmans & Loorbach, 2010). Questions arose around how the machine metaphors and mechanistic mindsets that are so ingrained into global and local political and administrative structures can allow for the open, diverse and participatory processes that a move into transformative futures require? An essential conundrum emerged: How can approaches that are inspired by a systems view of the world and by mindsets of interconnectedness find avenues into the very structures that hold the old system in place? The successful design of transformative change requires exactly that—new knowledge about the patterns and dynamics of systems, about the fostering of mindsets of interconnectedness coupled with expertise how and when people are able to learn together, and bring about future collectively. Process competence is a skill so essential for *transformation literacy* that it cannot be delegated only to specialists. What is required is a more widespread understanding of the multiple ways of becoming transformative. Designing transformations is a task that, in future, many decision-makers and change agents need to master. It is a future-making skill that acknowledges the fact that regenerative civilizations can only be brought about collectively, in a local and global learning process, and in a way that helps people to co-win such futures. With these three levels that constitute key elements for transformation literacy, this book will dive into the complexity and diversity of each level.

Part One looks at mindsets that are in service of a wellbeing and a healthy planet and can contribute to pathways towards regenerative civilizations. It explores interpretations why a global shift in mindsets towards seeing the world as an interconnected living system is necessary, in which ways such mindset shifts underpin transformative processes and how their emergence could be supported. It investigates the conceptual and practical integration of personal aspects of change and their relationships to the outer action of leading transformative change. The part highlights, analyses and connects different approaches towards fundamentally new mindsets, and connects them to the needed development of competencies for *transformation literacy*. The different contributions not only consider multi-cultural aspects, but will also showcase in exemplary ways how a new worldview can support collective stewardship for the planetary life-support system at all levels. The contributions range from more philosophical approaches regarding mindset shifts to discussing the impact and implication of shifted mindsets on economic, financial or institutional behaviour. In the introduction to *Part Two*, the text tracks the scientific history of the call for mindset shifts and relates this to the long-standing discussion on systemic,

linear and nonlinear thinking as a foundation for transformation literacy. It will also describe the practice of anchoring mind shifts from the angle of sustainability transformation practitioners.

Part Two outlines and illustrates in an exemplary way how a sustainable world might look like. It will dive into the question how to co-construct regenerative systems that enable and safeguard wellbeing on a healthy planet. The conceptual introduction to *Part Two* investigates current influential global systems (e.g., the financial system, the economic system, the education system), how they impact on worldviews and human behaviour and how they either prevent or support sustainability transformations. Moreover, the conceptual framing explores essentials and underlying principles of regenerative systems and how they could guide the move towards regenerative civilizations. *Part Two* explores what kind of systems reflect a new worldview and how they can be co-constructed towards regenerative systems based on a partnership with life's evolution and enhanced *transformation literacy*. It highlights emerging bottom-up systems that allow communities for change to take charge of their future, and connect local to global system designs that are likely to support pathways towards a regenerative world. The contributions show concepts and implementation attempts of regenerative approaches to human-to-human and human-to-nature interactions that showcase new operating models of humankind. They come from a wide-ranging spectrum to illustrate that the entry points for transformative change towards regenerative civilizations may come from very different angles. The contributors showcase exemplary systems that model collective stewardship of planetary wellbeing.

Part Three focuses on stewarding transformations towards wellbeing and a healthy Planet. It makes a contribution to enhancing the knowledge and practice of *transformation literacy*. This part will investigate how transformative change processes can be co-designed and enacted by change agents and decision-makers at different levels of global society. Successful sustainability transformations ultimately hinge on a broad range of actors to organize around stewarding transformative change. What is needed is the widespread ability to design and implement multiple relational issue-based and collaborative interventions that—together—drive and accelerate transformations. Conceptual and practice approaches to transformation benefit from models and methodologies that translate notions of enlivenment, vitality, resilience or thriving, into practical implications for organizing transformative change. The conceptual introduction of *Part Three* outlines the role of transformation networks between multiple actors in different institutions and how these networks are the cornerstone of transformation literacy. It highlights co-creative and collaborative multi-stakeholder and multi-level approaches to change and investigate the capacities needed for stewarding transformations across institutional silos and cultural as well as geographical disparities. Moreover, this part shows the interplay of multi-stakeholder collaboration initiatives, regulatory approaches and enabling environment approaches, supported by future-oriented narratives that take the concept of wellbeing and a healthy planet to heart. The part explores and connect different emerging pathways to large-scale transformations. It also highlights approaches to anchor large-scale transformative designs in research as well as planning of government, private sector or civil society.

In all three parts, we decided as editors to give the voice primarily to female contributors, not only, because women are still underrepresented in the global transformation discourse, but also, because their specific expertise combined with their gendered perspective offers a rich kaleidoscope of the aspects so relevant for transformation literacy.

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