



# The role of narratives in human-environmental relations: an essay on elaborating win-win solutions to climate change and sustainability

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Received: 31 August 2018 / Accepted: 28 February 2019 / Published online: 7 April 2019  
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## Abstract

In the context of sustainability and devising win-win solutions to socio-environmental challenges, this paper discusses various aspects of the fundamental role narratives play in grounding our values and institutions, impacting on our decisions and actions, and slowing down or accelerating change. Narratives are created to integrate particular events or trends in the worldview of the societies experiencing them. They anchor a linear story or timeline to underlying multidimensional “Gestalts” that characterize the society involved. Depending on the particular context involved, narratives can therefore “fix” existing assumptions, attitudes, and opinions, or they can open the way for change. When different narratives are conflated, results may emerge that have not been expected—as in the case of different perspectives on the relationship between humans and their environment. Narratives and the values they represent are articulated in the networks that each individual or group is part of. As such, they are at the root of the “imagined futures” that, according to Beckert, drive our societies’ economies. Changing narratives and thus changing imagined futures can transform ideas, attitudes, and institutions and are thus essential to effectuate societal change.

## 1 Narratives and GREEN-WIN

What is the relevance of narratives for the GREEN-WIN project, and in particular, for the elaboration of win-win approaches to a wide range of challenges of an entrepreneurial nature?

First of all, it seems to me, is the realization that economic opportunities and solutions are to a substantive extent dependent on current narratives in the communities and domains involved.

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This article is part of a Special Issue on Win-Win Solutions to Climatic Change edited by Diana Mangalagiu, Alexander Bisaro, Jochen Hinkel, and Joan David Tàbara

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Changing these narratives is one of the major ways in which entrepreneurs may create circumstances that favor their success, by expressing different values and different visions on the (immediate and more distant) future. Although I am not a specialist in that domain, I would argue that all truly successful enterprises have succeeded by inventing and re-inventing new narratives as a platform for the activities that go with them.

A beautiful published example of the challenges encountered in doing so, but also the success achieved when this is done is the story of Lane and Maxfield (2009) on the introduction of distributed control networks (LonWorks) by Echelon. An important element in this story is the role of the general cultural background in the acceptance of such narratives. In this case, whereas development of the technology initially was lauded but then hindered in the US, it was accepted in Italy.

Another example can be found in our own project: the introduction of freely available bicycles in Shanghai. That introduction itself caused chaos until the existing institutional regulation in the city was changed, based on a different conception that can be, and should be, seen as the implementation of a different narrative about the role of the bicycles in the city.

Narratives at different levels and domains have to be compatible with each other to enable innovations to be successful. The incompatibility between the city's narratives and that of the farmers on Sant'Erasmus in the Venice lagoon is the wider context in which the latter's attempt failed. In Bologna, successful entrepreneurs trying to do a very similar thing found that a sufficient part of the population there was in agreement with them to ensure a sufficient market for the project.

All this points to the fundamental role of narratives in our society and economy, to which Beckert refers (2016) when he bases his vision of the economy on the existence of imagined futures: *all (societal and) economic behavior is rooted in narratives and the ways in which these are experienced and articulated by people*. It is the path-dependent development of widely anchored multidimensional narratives that shapes a society and its culture. As all individual and collective decisions are made in that context, the only way in which one may hope to change behavior is by introducing novel narratives that resonate with existing ones but introduce novel fundamental values. Rather than doing this by introducing new theories, which limit the dimensionality of the new values and therefore make them more likely to encounter opposition or misunderstanding, doing so in terms of practical propositions that can be interpreted in different ways, depending on the frame of mind of the people involved, is often easier as it allows those concerned to develop their own interpretations of the changes, and therefore assume ownership.

## 2 Structure of the article

In order to circumscribe the concept of narratives and their role in achieving the kinds of transformations that are the topic of the Green-Win project, I will first look more closely at the emergence and role of a narrative in Amazonia that “fits” a novel and unexpected event into an existing worldview. Then, I will use a case study in Epirus (Greece) to touch on the relationship between “canonical” representations of the past and narrators' individual experiences to explain certain aspects of the shape of their narrative.

Then, I will briefly draw attention to the contextuality of narratives. The next sections are devoted to an important aspect of narratives in relation to decision-making: the way in which narratives combine “open” and “closed” categories. This is particularly relevant in the case of

dual perspectives on a relationship, such as between society and the environment. In such cases, there is a double balance between open and closed categories that leads to complex interactions in decision-making.

All this gains in relevance if one follows the arguments of Beckert (2016), according to whom, most of our decision-making in society (and in his case particularly in the economy) is driven by what he calls “imagined futures.” Such imagined futures are constructed in interaction between personal experience and the social networks in which people are embedded.

The last two sections before the conclusion are devoted to the role narratives can play in changing our attitudes towards climate change and sustainability.

### 3 The function of narratives

Narratives are probably as old as modern humans. Of course, we cannot prove this for the period before the invention of writing. But one of the oldest narratives known, the Gilgamesh Epic (dating to the mid-third millennium BCE), already has the typical structure of many narratives through the ages: in his travels, a hero encounters many dangers and obstacles that he has to overcome. It is essentially the same as the narratives of Jason and the Golden Fleece, or that of Odysseus/Ulysses that date back to Ancient Greek culture. The narratives describing the acts of Christ and those referring to Mohamed are different from the Greek ones. In Greek culture, the gods and heroes reflect different aspects of human nature and behavior, and often behave like human beings, while in the Judeo-Christian-Islamic culture, humans are supposed to strive for the ideal status that is projected by the main (near-godly) hero of the narrative.

But the narratives also have a similar function: as superficially linear stories (as are all told or written stories), they summarize events in a highly multidimensional world by referring to “Gestalts” in the encounters involved. These “Gestalts” are deeply anchored in their culture—so that the narratives or myths connect the people among whom they are told with their culture. A narrative anchors them and (re-)asserts their identity. The link between the (uni-)linear stories and the multidimensional world is constructed through resonance: the narrative refers to multidimensional characters that are part of the symbolic riches of the cultures involved.

This is relevant for our understanding of the SDGs. Whereas the dynamics involved are in many ways global, the ways they are represented in the minds of different populations differ depending on the set of narratives that anchor their cultures. Thus, the global dynamics are instantiated in different terms at regional and local levels, and to change the regional and local dynamics, different narratives need to be developed.

### 4 Narratives can serve to “acculturate” an unknown phenomenon

The British Social Anthropologist Steven Hugh-Jones (pers. comm.) once recounted to me how he discovered a new myth among the Amazonian population where he had done the fieldwork for his PhD thesis, which mapped the myths of this population. Many years after that initial fieldwork, he went back to the tribe and discovered that they had a new myth that he had not encountered at the time of his thesis fieldwork. After considerable research, he finally concluded that the new myth was about his own first appearance as a white person among these people.

That illustrates in my opinion a very salient point: myths and narratives often emerge to “explain” an unknown phenomenon in terms of the culture that experiences it. One could say that the narrative acculturates a phenomenon into the wider culture of the society involved.

## 5 A modern narrative from northern Greece

As part of an earlier European project, our team was trying to identify cases of “environmental degradation” in Epirus (Northern Greece). The anthropologist responsible for that, Sarah Green, spent weeks going around the area trying to find such cases, and in fact, defined underground solifluction creating large holes in the surface as instances of such degradation. But when she asked the population about them, they denied that these large holes in the ground were an instance of degradation. Asked what they thought was degradation, they answered: “the fact that Kasidiareas (a high mountain in the area) is growing hair ....” They were referring to the fact that on this formerly bald mountain, there were now trees growing. Tree growth was for them the symbol of environmental degradation (cf. van der Leeuw 1998). Why?

The environmental change symbolized for them a long history of societal degradation that was reflected in the environment. After WWII and the ensuing Greek civil war, which was very violent in this area, many younger people left the land for cities in Greece (Athens, Thessaloniki) and elsewhere (Melbourne, Toronto). This fundamentally changed the society, the economy, and the use of the land. Until then, most people in the area lived most of the year on hilltops from the products of large sheep and goat herds. But after the younger people left, the older population could not maintain that mode of life, and settled in the valleys, where they cultivated most fodder for their herds. Subsequently, they also changed the composition of their animals, reducing their reliance on sheep and goats, and increasing that on pigs. They connected through novel paved roads (built from the 1950s onwards) with the urban center of the region, Ioannina, and learned new technologies, new values, and new ways of doing things. But many older people left in the villages experienced this as a degradation of their own lifestyle and projected that perception on changes in the landscape.

Further research taught us that the “degradation” narrative reflected a comparison between a canonical past (the past of their parents and their ancestors) and their own lives. Because they felt that their own lives were a step down from that of their ancestors, they called their trajectory one of degradation, in contrast to the wider western narrative of “progress” linked to growing impact of the urban way of life (fridges, television, cars, etc.).

## 6 Narratives are contextual

The two last sections also implied another aspect of narratives—that they are contextual. That necessarily means that there is a cultural component to any narrative, that different cultures will express similar ideas by means of different narratives, and that different cultures will interpret the same narrative differently. We must therefore always take the cultural context of a narrative into account in interpreting it.

In Western Europe, for example, we have seen that between the mid-1700s and the present, the conception of the future changed. During the Middle Ages “the future was more of the same,” and the present was explained by the fact that in the past, “things had always been the way they were now”. With the emergence of the Enlightenment and the Industrial Revolution,

due to the discovery and use of fossil energy, innovation accelerated. As part of that process, the cultural focus shifted from the past to the future, and change became a reality (Girard 1990), changing the dominant narrative. It became commonplace to think of the future as shaped by human beings, and this implied a belief in “progress” towards an ideal, such as “sustainability.”

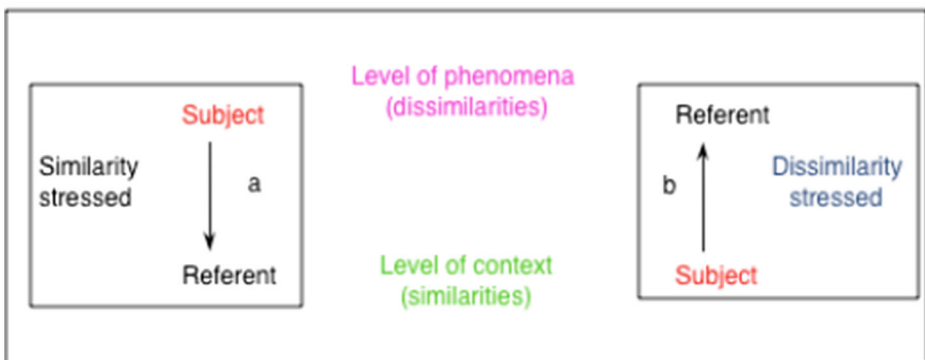
## 7 Narratives and categorization

Narratives use concepts, and as such, they are partly determined by the categories that they distinguish. Following a range of experiments, the behavioral psychologists Kahnemann and Tverski and their associates (Tversky 1977; Tverski and Gati 1978; Kahnemann and Tverski 1982) have concluded that similarity and dissimilarity should not be taken as absolutes. On the basis of their conclusions, one can argue for the following model of categorization (cf. Fig. 1).

Once an initial comparison between unknown phenomena has led to the *tentative* establishment of one or more categories, these categories are tested against other phenomena to establish which phenomena might be subsumed in them. In such testing, the category is the subject and the phenomena are the referents. There is therefore bias in favor of similarity. But when the relevant categories are *firmly* established, the process is inverted: the categories become the referents and the phenomena the subjects, so that the comparisons are biased towards dissimilarity, and it is determined which phenomena, after all, did not belong in the categories established.

Such a shift from “closed” to “open” categories was observed linguistically in detail by anthropologists ElGuindi and Selby (1976) in Oaxaca. The open categories were in the process of categorization and summarized situations where it was known what might fit in the category, but not yet what in the end would not. The closed categories expressed situations where both, what might fit and what in the end would not, were known.

### The categorisation cycle



Opening a category ...  
 ... and closing it

Fig. 1 Category formation according to Tverski and Gati 1978 (copyright van der Leeuw)

We all know this phenomenon in our scientific work. When faced with unknown phenomena, we first create “open” categories by developing hypotheses about those phenomena. Little by little, we then whittle away at the phenomena concerned by the hypotheses, in order to get a better handle on them. In so doing, we emphasize what seem the most important dimensions of the phenomena concerned, thus slowly transforming the hypotheses into definitions (“closed” categories) in which we describe them.

## 8 Narratives impact decisions

The interesting thing for us in this context is that narratives often link closed categories to open ones, or in other words, uncertainties to certainties in the evaluation of a situation. The exact balance between them is thus often essential for the outcome of decisions.

This is made clear in the example of the “*Structure of Scientific Revolutions*” so vividly described by Kuhn (1968). An existing paradigm consists of a network of closed categories that together form a paradigm or *optique* concerning a set of phenomena. In time, new phenomena emerge that for the moment are described in open categories. If enough of these categories ultimately attain closed status, a paradigm shift occurs, and a new way of looking at phenomena, and thus of deciding about phenomena, emerges.

In very different terms, this is also the process that underlies the well-known lemniscate that illustrates the basic ideas of the Resilience Alliance and the Stockholm Resilience Center (van der Leeuw and de Vries 2002; Thompson et al. 1990).

## 9 Narratives from complementary, interactive perspectives

In many cases, there are two ways to perceive the relational interactions between two objects, each looking at itself as the “inside” and looking at the other as the “outside.”

In the case of human-environmental relations, one can look at these not only from the society’s perspective but also from the environment’s perspective. In the first case, the society is the referent and the environment is the subject, but in the second case, that relationship is inverted. In Fig. 2, I present the differences in perspective that are inherent in the two approaches.

The interesting thing is that, when the two perspectives are interacting, the dangers of nature are overestimated and those of human intervention are underestimated. As a result, society is encouraged to intervene in the natural environment, and convinced that such interventions are reducing environmental risks. But in reality, of course, society reduces by its interaction the predictability of natural phenomena, as its interventions change many dimensions of the natural processes involved that have not been perceived by humans thanks to their limited (short-term working memory’s) information processing capacity. The end result is thus that humans continue to intervene in nature thinking that they can remove the inherent natural risks, while in reality, they aggravate those risks.

## 10 Imagined futures

Jens Beckert, in 2016, published a radically new perspective on the economy that directly relates to our topic here. He argues that human perspectives and decisions are actually driven

Milieu ...	Environment...
<ul style="list-style-type: none"> <li>• Humanity is compared to nature</li> <li>• The cohesion of nature, its unknown aspects, its strangeness and force are amplified,</li> <li>• The confusion and the handicaps of humanity are accentuated;</li> <li>• Humanity is <i>passive</i> in a natural environment which is <i>active</i> and aggressive</li> <li>• Change is attributed to nature, and people have no other choice but to adapt to nature;</li> <li>• Natural changes tend to be viewed as dangerous, because they are beyond human control</li> </ul>	<ul style="list-style-type: none"> <li>• Nature is compared to humanity</li> <li>• The cohesion and strength of nature is diminished, its known aspects emphasized</li> <li>• Cohesion and strength are accentuated in humanity</li> <li>• Humanity is <i>active</i> and aggressive in a natural environment that is <i>passive</i></li> <li>• Humanity is the source of all change; people create their environment</li> <li>• Natural changes seem more controllable and lose their dangerous appearance</li> </ul>

**Fig. 2** Two visions on the relationship between society and environment. In the case of “milieu,” nature is the referent and society the subject, so that society is compared to nature. In the case of “environment,” society is the referent, and nature the subject. These two comparisons lead to very different visions on the relative strengths and weaknesses of society and nature

by what he calls “imagined futures.” Since 1750, according to Beckert, as the western perspective on the future opened up (see above), this has set in motion a (uniquely “Western”) cognitive feed-forward loop that creates in our minds “imagined futures” and then develops “fictional expectations” that motivate people towards realizing them. In his words: “... expectations of the unforeseeable future inhabit the mind not as foreknowledge but as contingent imaginaries (2016, 9) [...] they create a world of their own into which actors can (and do) project themselves” (2016, 10). These fictional expectations are anchored in narratives that are continually adapted.

This exchange between imagined futures and present conditions shapes the narratives involved, which in turn drive our imagined futures and our decision-making. Hence, “Fictionality, far from being a lamentable but inconsequential moment of the future’s fundamental uncertainty, is a constitutive element of capitalist dynamics, including economic crises (2016,12)”. Beckert illustrates that in the book in detail for the four main pillars of any economy: money, credit, investment, and innovation.

The implications of the role of narratives in shaping our imagined futures stretch far beyond the economy. First, narratives express the cultural, institutional, and social embeddedness of our human decision-making. Decisions reflect the value systems of the people concerned; they are shaped in the interaction networks of these people. The UN’s Sustainable Development Goals, for example, are in essence based on a Western imagined future of continued “progress” that, as part of the globalization, has been projected onto other cultures. In other parts of the world, one finds underneath that global projection very different imagined futures.

Second, as we have seen above, imagined futures are constructed by comparing the present to an experienced past and an imagined future, and they are maintained only as long as there is confidence in that future, and by implication as long as the balance between open and closed categories is in favor of the latter. In the absence of such confidence, when open categories

dominate, a degradation in the clarity of a society's perceptions and certainties, or even a crisis, is experienced.

The anticipatory loop can then, very rapidly, be turned in a negative direction characterized by self-fulfilling negative dynamics driving towards uncertainty, as in the case of recent financial crises. But is not confined to such sharp crises—it can also slowly undermine the totality of our confidence in the future and result in hesitations, contradictory actions, and general loss of self-confidence.

Third, we need to consider the relationship between our imagined futures and the “real world out there.” That interaction is clearly an open-ended one that is not fully controllable, subject as it is to “ontological uncertainty” (Lane et al. 2009). As the imagined futures are confronted with the material and social “real” world, it is impossible to predict the outcome of such confrontations, especially over the longer term, due to changes in the second-order dynamics of the context in which shorter-term decisions are made. This can theoretically very rapidly transform peace into war, progress into the opposite, and trust into distrust.

## 11 Narratives and networks

One of the important functions of narratives is also to anchor a society's values, opinions, and actions. They are therefore important potential tools to change attitudes. Such attitudes, and the underlying values, are generated in social networks at different levels in a society: family, school, neighborhood, town, region, nation, etc. Those networks are therefore the locus of any attempts to change values and actions. In the Epirus case mentioned above, for example, attitudes and values are initially shaped at the village level as long as the shared information pool is more or less homogeneous, and contact between villages and the outside world is limited. When a little later the social networks of different individuals and families in the village are beginning to differentiate, this almost immediately leads to differences of opinion and may lead to conflicts.

Individuals that partake in networks never do so in exactly the same way. Their goal is *both* to be seen to adhere to the values of the network *and* to be seen to have their own, distinguishable, position in it. Of course, this is only possible if the value space of the network is high-dimensional, so that there are very many ways in which its members can distinguish themselves within the group or network. If the value space of the network is reduced to only a few dimensions, that inevitably creates unrest in the society (Polanyi 1944; Graeber 2001; Munck 2004). Thus, the reduction of values that have been inherent as globalization rolled over the value systems of many non-western cultures (and groups of non-globalizing people in western societies) has led, and currently strongly leads, (to nationalisms and populisms of various kinds). In essence, this is a fallback of societies on earlier values, narratives and identities, and smaller, denser, networks that people felt more comfortable with.

## 12 Narratives, climate change, and sustainability

As we have seen with the Epirus example, in many different cases, “environmental change” stands for different narratives and value sets not directly related to it. It will be essential, to deal with the phenomena concerned, to move from studying and transforming the climate dynamics (which are the symptoms of the impact of societal changes on the environment) to studying



and transforming the societal dynamics that are the core drivers involved. In doing so, moreover, we have to move from a doomsday (insecurity) perspective to an optimist (occasion for change) perspective—and find the new narratives that can do this.

In doing so, education at all levels, from earliest youth to adulthood, is essential. The basis for individual narratives is laid very early in life. Science is only one among very many different possible narratives (Rappaport 1999). Hence, we must all make an effort to transform the narratives that are driving our socio-environmental dynamics in unsustainable directions. This begins, in my opinion, in kindergarten and continues all our lives. To do so, one starting point could be to move from an education that is based on “truths” (closed categories) towards one that emphasizes that there are always choices, and that we must evaluate our choices against options not chosen, and against the potential unintended consequences of those choices that were made. From “problems,” we must move towards “challenges” and “opportunities.” There are always win-win solutions if one wants to find them. But even such solutions ultimately create new challenges, as I have illustrated in detail in a study of the socio-environmental dynamics of the genesis of the Western part of the Netherlands (2012).

### 13 Designing new narratives

There are many advantages to anchoring new narratives in long-term identity-related regional ones. Research I initiated in the Bassano area in the Veneto in the 1990s made clear, for example, how an Italian government attempt to declare part of a river course a nature preservation area divided the population between the bourgeoisie, who saw their long presence in the area as the marker of their identity, and the rural population, who saw their location as identity marker. The proposed “nature reserve” therefore led to criticism and conflict within Bassano society. If one had known this beforehand, one could have devised a novel narrative that brought together the society rather than split it (Filippucci 1997). Such a narrative could be dedicated to communicating clearly and with force that declaring one part of the river course a nature preservation area was not in any way an attempt to change the values everyone accorded to the landscape, but an attempt to ensure that some of that landscape would be preserved for future generations.

In the Argonne area that was the scene of the most intensive battles in WWI between Germans and allies, to this day, the dominant narrative is a negative one: “we have suffered and we are only visited by tourists who come to see the war cemeteries and the trenches.” In another of our projects, we offered to instantiate in the regional landscape an alternative, positive, narrative based on the fact that in Roman times, the area witnessed what could be called an early “industrial revolution” by developing a very sophisticated ceramic industry. This would have given the area another reason to attract tourists, but the inhabitants refused our offer because it did not fit in their existing vision of the past and present (Filippucci 2002). Devising an appropriate narrative to create a win-win situation proved impossible after almost a century of adhering to a lose-lose situation.

### 14 Conclusion

How does all of this relate to sustainability? It demonstrates that when the right narrative is offered at a time when “open” categories prevail, and change therefore has a chance, such a narrative can be instrumental in triggering or reinforcing important changes.

In designing such novel narratives, an important point of departure might be to emphasize the role of nature, rather than that of society. In the Republic of Mongolia and in China, for example, the concept of “green civilization” seems to be a productive one that is acceptable across many layers of society because based on it, one can conceive of win-win solutions for both society and the environment. An important aspect of that approach is that it places the situation of individuals and individual preoccupations in a much wider, positively valued context: achieving a collective “green civilization.” In that sense, the “green civilization” narrative also meets the more traditional East-Asian approach of according primacy to the context of individual actions and phenomena over the subject.

That approach is very different from the western one, which emphasizes the role of the subject over that of the context. In a western context, one would therefore have to devise a different narrative, possibly involving some sort of “green-win hero” in order to suit dominant western groups and forces.

But the nature of the narratives proposed is here less important than the fact that because narratives, to be effective, have to embed the situation which they are dealing with in the wider cultural context of the society involved, we cannot hope, ever, to improve global sustainability based on one or a few narratives—each culture, each society, needs to develop its narratives, and use them at leverage points that are appropriate. Of course, this will involve discussions between people who identify with different narratives at multiple scales, from the local and the regional to the national and the global. It will be interesting to see whether strategies can be developed to manage that process.

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