

# Chapter 2

## Marginality and Sustainability

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### 2.1 Introduction

Sustainability is a relatively new concept, with the adjective sustainable becoming a fashionable term in a relatively short space of time. That may be one of the reasons for wide range of different understandings as well as for the improper or inadequate use of the term sustainable. Policy makers are producing ever new policies, strategies, resolutions etc. for sustainable development, sustainable agriculture, tourism, transportation amongst others. Some important decision makers on the other hand are still not convinced that this is the only possible solution for long term human existence on planet Earth, or they are simply too short-term or profit-oriented. Considering the huge developmental differences between the global North and South (one of important spatial dimensions of marginality (Leimgruber 2004, p. 17) we may understand the countries of the South claiming that they have equal right to develop their economy in the way that countries of the North did in the past—using fossil fuels. However, it is not only the countries of the South that still see this kind of energy as an unavoidable basis for their near future development. Slovenia as a country of the global North, an OECD member with GDP a bit above 28,000 USD per capita in 2015, has recently invested more than 1.4 billion Euros into a thermal power plant that uses local lignite. In Plut's opinion the construction of the new block 6 of Šoštanj thermal power plant is a result of lobbying and has been politically forced with knowingly false key baseline data (Plut 2016). Furthermore, the ruling elite in Slovenia is more and more keen to take the decision for the construction of the second block of Krško nuclear power plant. Plut therefore considers Slovenia's energy development scenario as only moderately changed, centralized and intensive fossil-nuclear energy oriented, with excessive pressures on the environment. The presented example shows how difficult

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it is to act sustainable when there is a conflict between economic interests of different present time lobbies and interests of future generations (and nature).

A similar example from the highly developed North, only at much larger scale is from Canada. The Alberta oil sands is the world's largest present time energy project that, considering its huge devastating effects on the environment, might poetically be called "Hell in the boreal forest". Hundreds of square kilometers (60,234 ha of land had by 2008 (Gosselin et al. 2010, p. 167)) been transformed by surface mining from boreal forest into an anthropogenic wasteland. Mining is polluting the air and leading to the widespread deposition of chemicals in lakes and rivers as far as 50 km away from mining operations (Paskey et al. 2013). Huge highly toxic tailings ponds that attracted world's attention after the death of 1600 ducks are another big environmental issue, not to mention the problem of greenhouse gases emitted during the extraction of oil from oil sands. All this is the result of an intentionally hostile attitude towards the environment that is in this text termed "the marginalization of the nature". It is one of several possible perspectives of marginality issues related to nature discussed in this chapter. The concept of marginality and its links to sustainability are the key topic. To use the term marginalization in a context where this is a process concerning nature and environment is not a common practice in geography. The starting point used here is Leimgruber's (1994) definition of marginal regions and his four approaches (geometrical, ecological, economic, social). He considers ecological view of marginal regions as "ambiguous: it can either be taken as the natural potential of an area for human survival, or as the state of the environment." This later can be interpreted as marginalization of nature (environment). Another important aspect of marginality and marginalization research is the relation between environment and marginality. The starting point for this discussion is the book part "Environmental Drivers of Marginality" from von Braun and Gatzweiler's edited book "Marginality: Addressing the Nexus of Poverty, Exclusion and Ecology" (von Braun and Gatzweiler 2014). From the perspective of agricultural economists, the endowments of natural resources and the degradation of the land play a critical role in the processes that lead to marginality and poverty. Sustainable intensification of agriculture in such cases is the key strategy to cope with poverty and escape from marginality.

## 2.2 Marginalization of Nature

Marginalization of nature or marginalization of the natural environment is mentioned several times in Leimgruber's book *Between Global and Local: Marginality and Marginal Regions in the Context of Globalization and Deregulation* (Leimgruber 2004). He states that environment "has maintained its marginal status in economic thinking, especially as the flexibility of the economic system permits firms to change the location of critical production units" to third world countries with less effective environmental protection. Rapid growth of the Chinese

economy, just recently becoming the second largest in the world, is an exemplary case of environment's marginal position in the process of economic development. It is very common these days to read news about severe pollution in Chinese cities that confines population to stay inside, because going out harms their health. As Leimgruber (2004, p. 55) stated more than a decade ago: "Human activity still tends to marginalize the environment, putting human needs and wants (and greed) in first place, even if we know that the natural environment furnishes the fundamentals of our existence." In his first attempt at defining marginal regions he presented four possible approaches to marginality (Leimgruber 1994, p. 8)!

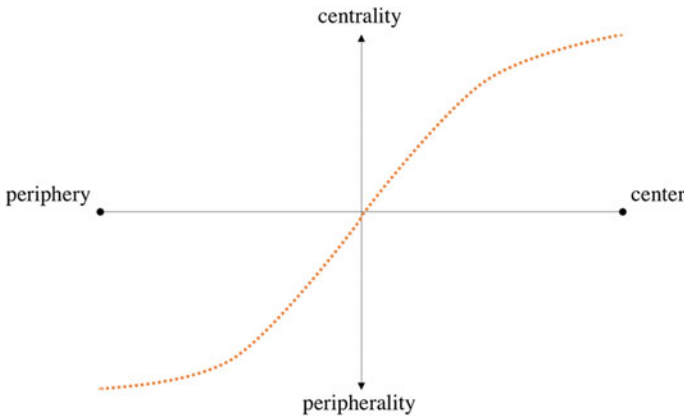
1. **Geometrical.** In this sense, marginal regions would be those at the geometric periphery of a larger area (e.g., a State, a Continent or an otherwise defined territory).
2. **Ecological.** This view is ambiguous: it can either be taken as the natural potential of an area for human survival, or as the state of the environment.
3. **Economic.** Marginality in this case would be defined by the production potential, accessibility, infrastructure, attractivity within space economy.
4. **Social.** In this case we would focus on minorities and socially marginal groups, according to various criteria (ethnicity, language, religion etc.).

He considered the second approach as delicate because ecological marginality is usually the antipode of economic marginality. From the center-periphery perspective economically the most developed areas such as London's City (CBD), the world's most important financial center is ecologically marginal. On the other side, economically marginal areas with few or no human interference are ecologically preserved and can be considered as ecologically central. At this point it is necessary to address the problem of center-periphery perspective. Its linear design with two diametrically opposite ends is not appropriate for such a complex phenomenon as (ecological) marginality. The position closer to one end means more familiarity with the extreme value (at that end). In the case that the end of the line is periphery that means more peripherality (Fig. 2.1). The degree of peripherality grows in the direction of "extreme periphery" at the left end of the line.

Marginality does not occur only at the extreme periphery. Marginal individuals or groups may be present all along the center-periphery line. For example, central parts of the old city center may fall into decline and become a ghetto for people at the lowest level of social hierarchy, usually immigrants or condemned ethnic groups or both. We can observe the spatial proximity of the mainstream social classes and those with few access to social benefits and sources necessary for descent life along the line. They may not be neighbours, but they do live in the same city. Marginality's location is therefore not exclusively peripheral. If marginality of individuals and social groups is in a nonconformity with the center-periphery line than such nonconformity of ecological marginality should be acceptable as well. This is the reason for consideration of center-periphery continuum as a not very practical framework for the conceptualization of marginality, except in the case of geometric approach.

Areas considered as environmentally marginal should:

- have a low level of biodiversity,



**Fig. 2.1** Center-periphery line and the degrees of centrality and peripherality along the line between the two extremes (*dotted line*)

- be poor providers of ecosystem services,
- be largely transformed into non-productive technical landscape.

There is no doubt that there are many such areas all over the world and in many cases these are urban areas with high concentrations of wealth, power, interactions, movements of people, cargo and information etc. The reason for the transformation of these areas into anthropogenic wasteland is the human aspiration to adapt the environment in a way that best serves human activities at certain place. To move around smoothly and fast we need paved streets, roads, highways. To use space effectively we put more and more people to live and work in high multilevel buildings that we build in large numbers close together and over large areas. Plants that used to occupy the area of today's city are 'ghettoized'—they may only live in a kind of 'fauna reservations' called parks! Even there, human race largely decides which species may and which may not live there. Similarly it can be stated for the agricultural landscape even though the space there is in major part 'settled' with fauna (cultural plants)! The level of biodiversity of course is very, or in cases of large monoculture fields, even extremely low. The extent of human interference is so intense and widespread that these kind of areas cannot only be considered as marginal in a sense that they are located at the edge of "predominantly natural areas" (ecologically central areas). Agricultural land and vast areas of economically productive forests occupy the major part of the dry land. Natural as well as agricultural landscapes can sometimes be only strips at the margin of one another, but more often they form large complexes of either natural or agricultural land or even complexes where both types are occupying different parts of certain area. The marginality that we can attribute to the landscapes highly transformed by human impact is therefore not a consequence of their location at the margin of naturally well preserved areas.

From the perspective of the marginalization of nature (natural habitats, environment), however, it is possible to consider this kind of areas marginal. By marginalization of nature it is meant that the importance of nature is at the edge (at the margin) of 'human' priorities. Human in this case does not mean the whole humanity, but rather a very small part of it, the part that has the power to direct the decision-making processes (politicians, corporate management, financial oligarchy etc.). It is an influential minority that still values profit and power more than anything else and knowingly does not stop to act unsustainable, despite the catastrophic influences of profit based economic growth on nature, as well as on human race (on the whole planet). The part of humanity that does value the nature and fights for changes in attitude towards it has already achieved a lot, but still not enough to make a final break through with sustainable, nature caring value system. The consumer-based society and values spreading from the western world to the developing countries blurs the image of a disastrous future with "must have" commodities creating and satisfying ever new needs. It is a kind of an addiction. Even though, one knows how harmful smoking is, he/she cannot quit smoking, because it is easier and more pleasant to continue smoking than to fight an unpleasant and hard fight against the addiction. Similarly, it is more convenient to do business as usual and to keep trying to maintain high level of standard of living, especially its material part than it is to change habits and to try to reduce individual environmental impacts. Knowing what the negative human impacts on nature mean for the future of mankind and for the entire planet is obviously not enough threatening.

Many people nowadays realize that future development should be redirected towards long term sustainability. However, there is large majority that is more or less ignorant and serves the earlier mentioned minority that follows the path of short term profits. Kay Milton, an environmental and ecological anthropologist, professor emeritus in anthropology from Queen's University Belfast posed a question "Why are some people in western societies actively concerned to protect nature and natural things while others are not?" (Milton 2002, p. 92). She concludes that it is a matter of values and she therefore rephrased it into: "Why do some people value nature and natural things more than do others?" (ibid., p. 93). The reason might be that for some nature is sacred. There has been a lot of discussion about different attitude towards nature among natives in America or Aborigines in Australia and most certainly among hunters and gatherers in prehistorical time. There are also many different views about how to define "sacred". Kay Milton's viewpoint is that it should be based on emotions. Sacred can be looked upon as something that matters most to people. It gives them sense and pattern or, put in other words, it gives their life meaning and their response to the things that they hold for sacred is, in her opinion, emotional. The following statement shows the importance of the process of socialization on the creation of "sacred" (Milton 2002, p. 108):

What each individual comes to value most will depend on the context in which they learn about the world, the kinds of personal experiences they have, the ways in which they engage with their fellow human beings and with their non-human surroundings.

The awareness of the importance of nature and the need for change in humanity's attitude towards it is growing and is, in some countries, strongly supported through educational system. On the other side, there are also numerous non-governmental organizations that are fighting for the protection of nature, not to mention the "green" parties, some with more and others with less or few political influence. The public pressure, as well as immense number of research results showing the highly probable course of undesirable events have forced politicians to act. At the highest international level the Rio process that started in 1992 brought up crucial issues that should be solved in order not to deplete the important resources for future generations. The UN, as the widest international organization is, in many aspects responsible for the future of the planet, shows its dedication to sustainable development by putting it into the center of its attention as may be concluded just by looking at the UN website. Under "What we do" there are five fields of UN activities. "Maintain international peace and security" is logically on the first place, followed by "Protect human rights" and "Deliver humanitarian aid". Then follows "Promote sustainable development" and the last field of UN activities presented is "Uphold international law" (United nations 2016). All these issues may be considered anthropocentric, including the one that is focused on sustainability. Protection of nature may implicitly be included, but the main goal is still the nature in the service of humanity (present and future generations). "The 2030 Agenda for Sustainable Development" adopted by UN General Assembly in 2015 puts forward 17 sustainable development goals and 169 targets (UN General Assembly 2015). In the first five goals 'nature' does not appear. These goals focus on the problems that are mainly a consequence of immense present social inequality, aiming to end poverty and hunger as well as to ensure healthy life, quality education and gender equality. Water appears in the sixth goal, but the goal itself mainly concentrates on the supply of clean water ("sustainable management of water and sanitation for all"). The next six goals all use the adjective sustainable, with nouns such as energy, economic growth and employment, industrialization, human settlements and cities. The only one not using the term sustainable is focused on the reduction of inequality among countries. Goals 13–15 mention climate, oceans, seas, terrestrial ecosystems and forests, but again, mainly as resources, not as values that deserve protection and conservation as such. The only goal that can be interpreted from this perspective is the second part of the goal 15 that aims to "halt and reverse land degradation and halt biodiversity loss". The last two goals are again concentrated on society, institutions and global partnership needed to implement prior goals.

What we can conclude about the position of nature from these goals is that nature does matter, but it is not of central importance. The goals are focused on the development and on the humanity while nature's role is still to serve as the resource provider and the picturesque scenery of humanity's existence. There is no clear evidence that these goals show respect for nature 'per se' and this is not only because of its importance for the survival of humanity and for securing certain level of living for all its members. This means that nature while being far from holding marginal position on global political agenda, is also far from being the ultimate value by itself with no reference to the benefits for humanity. With other words,

global political consensus does not give nature a status that could be in any way defined as sacred, but it aims to partially demarginalize it, because of the benefits that protection, conservation and reduction of degradation brings to humanity.

## 2.3 Nature as a Marginalizing Force

Turning the focus from nature to humanity brings us to the other side of the story about marginality and nature. In this case, natural (environmental) conditions may be the cause for marginality of certain social group or the whole of local or regional society at various levels.

At past meetings of the IGU commissions dealing with marginality and marginalization<sup>1</sup> there have been several diverse presentations that put the above relationship into perspective. The first case to be presented here is from Ethiopia. Harsh conditions for rural population in many parts of this country are well known, as are the cases of droughts and famine. However, not so often mentioned, but also very important, is a conflict between wildlife and humans. They often compete for the same resources; humans may play the role of predators in relation to wildlife and vice versa and very often the problem is the wildlife predation on crops and livestock. This is not a problem only in developing countries. Slovenia, where 60% of territory is covered with woods also experiences a lot of damage to its agriculture because of wildlife, but farmers receive compensation and their existence is not endangered. In Africa, the situation is different and farmers on subsistence farms may experience hunger or at least must work much harder to protect their crops. The consequence is “local hostility against the conservation policy” (Dixon et al. 2010). Farmers in Western Ethiopia that are practicing wetland agriculture feel that their rights are not protected, while the rights of animals are. They believe that the number of animals that are predating their crops and destroying their fields is growing because they are not allowed to kill them. The wider picture reveals the causes of the problem: the dynamic of the coffee market and population pressure on the land. There are more and more coffee forests and more and more land is cleared for agriculture. The wildlife is therefore forced to live in ever smaller areas of woods and in search for food they are predating farmer’s crops, therefore causing “regional food security problems” (ibid.).

Yet another interesting case from Africa reveals a problem of development projects, often induced from outside neglecting the importance of natural conditions and the relationships between local population and their environment. Tony Binns when writing about community based development in Africa puts forward an interesting and probable thesis (Binns 2010).

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<sup>1</sup>It started as the Study group and became a Commission with several names, the present being C16.29 Marginalization, Globalization and Regional and Local Responses.

... a detailed understanding of the local scene is an absolutely essential pre-requisite for successful and sustainable projects, and this must include a sensitive understanding of the relationships between people and environment.

According to him geographers could play an important role in “understanding and accelerating development processes”. Academics of other disciplines often tend to concentrate either on people or environment, while geographers are more keen to take a holistic perspective which is absolutely needed in such cases. Marginalization caused at least partly by natural conditions, can only be avoided in this manner.

A quite different perspective is revealed in the paper titled “Environmental marginality and natural disasters ...” presenting a case from northern Portugal (Regua, river basin of Douro river) (Gomes et al. 2007). In the autumn and winter of 2000/2001 there were extreme precipitations causing a series of disastrous events with great material damage and numerous casualties. Many people lost their homes due to numerous landslides and the authors report about the fear that local population had to live with after these disastrous events, some of them even having nightmares. Douro valley is a famous wine region and there is no doubt that this kind of land use had a certain share in the complex of conditions triggering the series of landslides. Nevertheless, it is a natural disaster (or a series of it) that in a certain way marginalized many people in the region. The authors even mention self-marginalization, meaning that some people that they interviewed reject the idea of changing their place of residence and/or their traditional economic activity (usually producing port wine). Their attachment to the land of their ancestors and to the tradition can be explained by their highly valuing of their piece of land and their home (as something sacred to them—emotional tie to the land). Therefore, neither the fear, nor the influences of globalization can make these people change their life situation. They prefer to live in marginal conditions than to move and change their life.

Another aspect of natural disasters in relationship with marginalization is emphasized by Bradley Cullen (2007).

When a region suffers a disaster, marginal groups are generally the most severely impacted. Low-income households, minorities, the elderly, and people living on assistance, who are often too poor to move elsewhere, often occupy areas extremely vulnerable to both natural and technological disasters. The significance of the losses to these marginal groups often far exceeds that of their non-marginal counterparts, because even though their economic losses are less they represent a far higher percentage of their total assets.

This brings us to the relationship between marginality and poverty. The authors that by my opinion have contributed the most to this topic are Franz W. Gatzweiler and Joachim von Braun, both being editors and authors of the books *Marginality: Addressing the Nexus of Poverty, Exclusion and Ecology* (von Braun and Gatzweiler 2014) and *Marginality: Addressing the root causes of extreme poverty* (Gatzweiler et al. 2011). The first one also examines the issue of environment and ecology and has therefore attracted attention as this chapter focuses on marginality and sustainability.

It is interesting that, within the above cited work, marginality represents an inclusive and interdisciplinary framework for the research of poverty. Marginality is understood as multidimensional. Everybody who is poor is marginalized in one way or another. On the other side "... the socio-cultural context and individual perception will define in which and in how many dimensions someone needs to be marginalized in order to be considered poor" (Gatzweiler and Baumüller 2014, p. 28). The marginality framework is constructed from complexes of societal and biophysical clusters. Human and social capital, capabilities of actors and communities etc. can be found within societal complex while biophysical consist of geographic location, soil quality, vegetation, and climate as well as of manmade infrastructure. Both complexes can play enabling or constraining role, while the actors (individuals, communities) following certain rational choices, take decisions to improve their situation by reducing the constraining conditions on one side and enhancing the enabling causal clusters. These actions may result in certain degree of well-being or in poverty (Gatzweiler and Baumüller 2014, p. 36). The poor and marginalized are not the sole actors that can influence on their situation. They may be caught in the vicious circle of poverty and marginality and the decision makers, a level or more above them, should react after being warned by feedback mechanisms to take actions for the reduction of constraining complexes. Only then can the marginalized poor act on their own for their own well-being.

Besides the presented conceptualization of marginality, the book also presents a discussion about the concept of marginality from an ecological perspective. Marginal in this case is "applied to describe phenomena that occur at biophysical limits of any kind" (Callo-Concha et al. 2014, p. 58). To define marginality conditions of an ecosystem is a very complex task because of the immense number of mutual interactions and positive and negative feedbacks. Marginalization could therefore, in this case, be linked to the carrying capacity of the ecosystem. There is a limit in the size of population of certain species that can be sustained in an area. It depends on the resources needed for the survival and the competition with other species dependent from the same resources. Translating this from ecological to social systems results in a consideration of marginality as an "overexploitation of a system's resources, often due to either high human population density or else decreased resource availability" (ibid., p. 59). The authors of the cited chapter perceive the attachment of values by humans to everything around them that can improve their living conditions as their aim to achieve ideal homeostatic conditions. By the analogy with living organisms in general, they define marginal conditions as those that are threatening because of homeostatic imbalance. It is the human brain's responsibility to detect the position out of homeostatic range and to stimulate corrective actions.

Of course humans are no longer purely physiological beings that can therefore survive outside the margins of ecological suitability. With the use of modern technology, they can adapt to extremely hostile environment, but are in such cases highly dependent on inputs from external sources. These inputs are not always feasible and, in cases of remote geographical locations far from centers that concentrate all the main resources, people mainly depend on available local resources

and if these are too scarce to guarantee satisfactory well-being then people living at such locations are considered 'marginal'. Farmers who are facing the lack of water, poor (low productive) soils or other factors limiting the results of their agricultural practice are marginalized due to the restrictive conditions within the ecological system that does not provide goods and services that would ensure them their well-being. Such situation may evolve due to degradation (desertification, soil acidification or salinization, air or water pollution, etc.) that may be caused by local or global actors (degradation-induced marginality).

Restricted availability of resources that causes marginality is not necessarily equal for all. Some have more adaptive skills (within social system) and may, through competition, avoid marginalization on the account of others as in a case when one actor takes land or resources from another. On the other hand, the central government may impact on local communities through the appropriation of land. The drivers of marginalization are constantly under the influence of changing socio-ecological factors and out of the direct control of people that are directly affected (*ibid.*, p. 61).

Callo-Concha and his co-authors argue that marginality should be addressed through resilience and adaptability. They agree that overuse of local natural resources aggravates poverty. That often happens because of overpopulation. They cite several cases of resource depletion that lead to the marginalization and poverty of local population. One of them is, for example, from the West African savannah where limited soil productivity and highly variable precipitation patterns are constraining agricultural systems. Others are cases of slash-and-burn agriculture causing deforestation and soil degradation and overpopulation causing the migration to less productive mountainous environment. The authors believe that increase of resilience (a concept originally used in ecology) and the adaptive capacity of socio-ecological system can prevent marginalization. However, that can only be achieved by considering all its interlinked components. It must guarantee food security, generate income opportunities and above all maintain ecosystem services (*ibid.*, p. 63).

The above discussion again reveals the anthropocentric stance that is pointing out the restrictions in the socio-ecosystems which do not allow for the well-being of their inhabitants. Ecological marginality is therefore largely understood as a scarcity of essential natural resources within a specific spatial-social context. Unsustainable agricultural practices often emerging from overpopulation always worsen situations and enhance marginality and push the already poor into even deeper poverty.

## 2.4 Conclusions

Despite numerous international incentives that resulted in Rio process, the Paris climate agreement and in the adoption of sustainable development goals it is still not possible to say that nature has been positioned in the place where it used to be in the time when humanity has been fully aware of its total dependence on nature and valued it as sacred. Sustainable development goals can be interpreted as an

anthropocentric stance that still considers nature as subordinate to humanity. Nature still ‘must be managed’ to serve humanity for its long-term survival and well-being. However, recent coordinated international actions may be considered as a step away from brutal exploitation that has marked 19th and 20th century and thus as a beginning of a process of demarginalization of nature.

The important role played by nature in the process of marginalization can be confirmed by numerous case studies that are revealing how the scarcity of natural resources that are necessary for relative well-being of inhabitants of certain socio-ecological system, marginalizes these inhabitants or at least most of them. Of course, nature represents only one dimension within the marginalization process, the other is always social. It is the way that society is organized that forces certain parts of its members to live in unfavorable natural conditions that do not provide them with satisfactory resources. The solution can therefore only be in changes in social organization that will result in reduced inequality in the availability of resources. These changes can only be achieved at those levels of decision making process that are higher than local. Local, marginal communities are usually helpless and unable to take the decisions that could help them improve their unfavourable situation. Often they have no other choice than to further degrade (deplete) their environment, thus worsening conditions for their survival. They need the aid of the wider community to adopt sustainable agricultural practices, or other economic activities that can provide them necessary incomes. Sustainable development for marginal regions with natural constraints must respect specific natural conditions and cultural traditions. Practices that may be successful elsewhere in different natural and cultural conditions may not be appropriate if at least some of the mentioned conditions differ. It is therefore essential to develop problematic marginal regions with appropriate multidisciplinary approaches so that no aspect of the expected consequences of developmental actions is not overlooked.

The final thought of this chapter might be that unsustainable practices often go hand in hand with marginality, but the only way to overcome marginality is through development that is directed towards sustainability and respects social, cultural and natural conditions of the region. On the other hand, the major part of unsustainable practices is still caused by the decisions taken by the wealthiest and the most powerful that are thus marginalizing the rest of humanity and nature itself.

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