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Thinking habitability as socially differentiated, and as influenced by tele-connections

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Introduction

With increasing evidence of stronger and more devastating impacts of climate and resulting environmental change (IPCC 2022), questions are getting more manifest about the extent and the limits to which humans can adapt to these changes (Dow et al. 2013). The long-term impacts of climate change on places and people, and the perspective on permanent losses and damages have contributed to an increasing interest in the concept of habitability. Originating from astrophysics, the term has recently become a promising concept to conceptualize and explain such changes induced by climate change (see e.g. Horton et al. 2021, Vinke 2022). With the HABITABLE project, a large, EC-funded collaborative research project is dedicated to exploring the relationships between changes in habitability and human mobility and migration (https://habitableproject.org/). The focus of current research on systems perspectives, tipping elements and thresholds (see for example the contribution of Dr. Franco Gavonel in this Cyberseminar) is important, as it helps us to understand the often complex and non-linear dynamics involved in changes of social-ecological systems and their parameters that constitute habitability.

However, two important aspects are missing in these conceptualizations: first, changes in habitability are not affecting all people living in a given place in the same way and to the same degree. Second, it is important to consider places as connected with other places and units through multiple ways.

Habitability as socially and intersectionally differentiated

Climate change affects populations very unequally, with impacts strongest for those who are most vulnerable and poor (IPCC 2022), and contributing to potentially increasing poverty (Jafino et al. 2020). This is a matter of concern on a global scale (and for discussions on climate justice and accountability), as in most cases countries with little total historic share in emissions are most exposed and most vulnerable to climate impacts (Meyer and Roser 2010), but also on sub-national and local scale. Habitability is not uniform (or to put it more cautiously, changes in habitability do not manifest uniformly) for a given place or spatial unit, in two ways: first, changes in habitability do not affect all people *in the same way*, but rather depend on the interactions of people with a place. A dryland savannah might be perfectly habitable for pastoralists, with their extensive use of land and water resources, while it might be uninhabitable for farmers with their more intensive resource use; households with land higher on slopes might not have sufficient water anymore when a region becomes drier, while households further down might still benefit from groundwater.

And second, changes in habitability do not affect all people to *the same degree*. Rather this depends on the social status and position of individuals and groups, for example a place might be well habitable for people with sufficient resource endowment, but cannot sustain the livelihoods of poor households when internal redistribution mechanisms fail due to increasing resource pressure; or when intra-household power relations, in combination with environmental degradation makes it increasingly difficult for women to pursue their livelihood activities; or when certain ethnic or social groups become excluded from resource use due to scarcity.

Thus, I argue that habitability is not (or at least: does not translate into) the same for everyone, but instead needs to be considered as distributed unequally along multiple intersecting axes of difference, such as gender, age, ethnicity, class, caste, disability, etc., much like risk exposure and vulnerability (e.g. Kaijser and Kronsell 2014, Trisos et al. 2022).

Habitability as shaped by tele-connectivities and translocality

As places are never existing in isolation and without relations to other places, it would be inappropriate to conceptualize them, and their internal dynamics, processes and resilience, without considering the relations to "the outside". The role of tele-coupling and translocality for coupled social-ecological systems (e.g. Friis et al. 2019, Adger et al. 2009) and for livelihoods (e.g. Sakdapolrak et al. 2016) have been well established. Such tele-coupling occurs between places that can be adjacent or far away, between units on different levels, e.g. between a village and a national government, and along different dimensions, e.g. through infrastructure, communication, migration, financial transfers, symbolic, political or administrative relations. Examples include the role of agricultural subsidies and policy measures in the European Union to sustain liveability in depopulating rural areas (EU 2022), the importance of food aid to prevent further drought displacement in the Horn of Africa (FAO 2022), or the estimate by the International Fund for Agricultural Development that every ninth person globally is dependent on remittances from international migrants for securing livelihoods (Ponsot et al. 2017).

Governments and powerful actors are as important as "ordinary" people in influencing the habitability of specific places. The latter do so through migration, for example when migrant household member's remittances enable people to stay at places of origin, despite deteriorating conditions. The former play a very important role in certain places, regions or whole states, for example when governments or private actors provide infrastructure and resources for sustaining the habitability of otherwise non-habitable places for asserting territorial control or securing boundaries or resources. Examples for this would be the funding and support of irrigation infrastructure in desert areas, military towns in high mountain areas, or mining places in the Arctic or in deserts. Such actions can increase habitability, but also decrease it (or both can happen, first one than the other), for example through resource overuse or pollution. Connectivity can, in addition to stabilizing social-ecological systems at places, also increase their vulnerability, if they are very dependent on it – think of how seriously the global supply chains were affected during the COVID outbreaks in 2020 and 2021, and with them also places and regions.

Suggestions for discussion and research

From the above, I suggest a discussion on the following points.

We need to include an intersectionally differentiated understanding of habitability – otherwise we risk of overlooking the most vulnerable and in need groups. In addition, by understanding the mechanisms how, and why, habitability is unequally "distributed", we will be much better able to address the causes for that, and to deliver efficient and effective solutions.

To be able to consider these differences, it is helpful to understand habitability, similar to affordances, as the properties of relationships between people and places. In such an understanding, habitability neither results from the inherent properties of places, nor from the cultural construction and perceptions of place alone – but is an emergent property that results from the interaction of people and places (see Hutchby 2001, Sterly and Sakdapolrak 2020). The way how habitability (and habitability changes) would be experienced by a certain group of people, is shaped through the way that have (and have been able to) engaged and interacted with their natural and built environment, with social and symbolic features of a place. As such, habitability would be both the outcome of the engagement and usage of place, and at the same time it conditions place usage, experience, and perception.

Conceptualizing habitability needs to consider teleconnections and adopting a relational perspective, seeing places as connected across scales and space. This requires a multi-scalar perspective on three important key mechanisms that link places and people across space and scales: biophysical linkages and feedback systems; material and immaterial structures such as infrastructure or market linkages; practices and flows of resources, people and information (Adger el al. 2009).

There are two important reasons why we need to broaden and deepen the concept of habitability in these ways: first, an environmental and SES-informed perspective is important to understand important underlying dynamics of any habitability changes, and especially to plan for grave changes in the future that might otherwise be difficult to foresee (e.g. loss of survivability due to extreme heat, or sea level rise). However, in (many) cases where habitability changes are still far from reaching such thresholds of non-survivability or large-scale livelihood losses *for everyone*, places might well be uninhabitable for the most vulnerable, those who have the highest need for support. To be able to "see" such processes, can also be an early warning sign, and help to sensitize actors. Second, if we do not take into account tele-connectivities, we might overlook important local habitability changes that stay "hidden" by compensating mechanisms, e.g. very short-term temporary migration, remittance transfers, government or NGO support and subsidies, etc, and thus risk to overestimate the stability of a places' habitability.

Literature

Adger W.N., Dessai S., Goulden M., Hulme M., Lorenzoni I., Naess L.O., Wreford A. (2009): Are there social limits to adaptation to climate change? In: Climatic Change 93, 335-354. https://doi.org/10.1007/s10584-008-9520-z

Dow, K., Berkhout, F., Preston, B. L., Klein, R. J. T., Midgley, G., & Shaw, R. (2013). Limits to adaptation. *Nature Climate Change*, *3*(4), 305–307. https://doi.org/10.1038/nclimate1847

EU (2022): The common agricultural policy at a glance. https://agriculture.ec.europa.eu/common-agricultural-policy/cap-overview/cap-glance_en

FAO (2022): Drought in the Horn of Africa - Rapid response and mitigation plan to avert a humanitarian catastrophe, January–June 2022 https://www.fao.org/3/cb8280en/cb8280en.pdf

Friis, C., Nielsen, J. Ø. (Eds.) (2019): Telecoupling. Exploring Land-Use Change in a Globalised World. Springer International Publishing.

Horton, R.M., de Sherbinin, A., Wrathall, D., Oppenheimer, M. (2021): Assessing human habitability and migration. Integrate global top-down and local bottom-up analyses. *Science* 372(6548), 1279-1283. https://doi.org/10.1126/science.abi8603

Hutchby I. (2001): Technologies, Texts and Affordances. In: Sociology, 35 (2), pp. 441–456. https://doi/org/10.1177/S0038038501000219

IPCC (2022): Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, https://doi.org/10.1017/9781009325844

Jafino, B.A., Walsh, B., Rozenberg, J., Hallegatte, S. (2020): Revised Estimates of the Impact of Climate Change on Extreme Poverty by 2030. Worldbank Policy Research Working Paper 9417. https://documents1.worldbank.org/curated/en/706751601388457990/pdf/Revised-Estimates-of-the-Impact-of-Climate-Change-on-Extreme-Poverty-by-2030.pdf

Kaijser, A. and Kronsell, A. (2014): Climate change through the lens of intersectionality. Environmental politics 23: 417-433, https://doi.org/10.1080/09644016.2013.835203

Meyer, L. H. and Roser, D. (2010). Climate Justice and Historical Emissions. Critical Review of International Social and Political Philosophy, 13, 229–53. https://doi.org/10.1080/13698230903326349

Ponsot, F., Terry, D. F., Vásquez, B., de Vasconcelos, P. (2017): *Sending Money Home: Contributing to the SDGs, one family at a time*, https://www.ifad.org/en/web/knowledge/-/publication/sending-money-home-contributing-to-the-sdgs-one-family-at-a-time

Sakdapolrak P, Naruchaikusaol S, Peth S A, Porst L, Rockenbauch T and Tolo V 2016 Migration in a changing climate. Towards a translocal social resilience approach. Die Erde 147, 81–94.

Sterly, H., & Sakdapolrak, P. (2020). Multiple Dimensions of Mediatised Translocal Social Practices. A Cast Study of Domestic Migrants in Bangladesh. Mitteilungen der Österreichischen Geographischen Gesellschaft, 162, 369-395. https://doi.org/10.1553/moegg162s369

Trisos, C.H., Adelekan, I.O., Totin, E., et al. (2022) Africa. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S.

Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press.

Vinke, K. (2022): Sturmnomaden. dtv, Munich