Sustainability-driven Entrepreneurship as a contributor to socio-economic transitions to sustainability

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1. Introduction

It is impossible to separate economic activity from the biophysical environment in which it takes place. Current economic growth has been supported and, so far, continues to be supported by a relatively stable biophysical environment over the last 10,000 years, known as the geological period of the 'holocene'. However, global disturbances call this stability into question. Human interference with the planet, elsewhere called "the colonization of nature" (Haberl et al. 2011:2), is widespread, as Rockström et al. illustrate in their 2009 paper on planetary boundaries. Due to the increasing human interference in the biophysical environment, Steffen et al. (2007) propose that we have moved from the 'holocene' to the 'anthropocene'. In this age, "humankind is wreaking changes upon the biopshere on a scale and at a speed that gives real cause for concern" (Haberl et al. 2007:5). Climate change and associated global weather phenomena, global economic and financial crises, widespread inequality – all these factors contribute to the increasing calls for transitions to sustainability.

2. Sustainability-driven Entrepreneurs as change agents

The lock-in of the current economic system is closely related to the fallacy of economic growth. Traditional economics see human action as "atomized and undersocialized" and "disallow [...] any impact of social structure and social relations on production, distribution, or consumption" (Granovetter 1985:483). Traditional economics see human action as "atomized and undersocialized" and "disallow [...] any impact of social structure and social relations on production, distribution, or consumption" (Granovetter 1985:483). Therefore, economic analysis needs to be reframed radically to be "more consistent with the systemic interdependence of economic activity on natural resources and waste- assimilation processes" (Foxon et

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al. 2013:189) and for a better understanding for processes of change in different realms.

The notion of sustainability-driven entrepreneurship is employed to uncover the potential barriers and enablers surrounding a novel and potentially transformative business form. They can be considered to play a vital role in the co-evolutionary dynamics of constructing niches that provide the opportunity for succeeding constellations to emerge (see Arthur 2009; Potts et. al. 2010). With the rising insight that systems are often locked-in and that rules and regulations often prevent the emergence of new forms of organizations that can deal with environmental and/or social issues, the role of entrepreneurs that strive to change such institutional barriers has come forth as an important driver in the transition towards sustainability.

The case study drawn upon in this paper focuses on Sustainability-driven Entrepreneurship. Sustainability-driven Entrepreneurship holistically integrates the economic, social and environmental dimensions of wealth generation into its organization and innovation processes. It is "focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains to individuals, the economy, society" (Patzelt & Shepherd 2010) and nature. As a result, sustainability not only takes shape in the products and services and in the organizational forms such firms encompass, but also in the business culture and socio-ecological networks they embody.

3. Complexity in sustainability transitions

Sustainability-driven Entrepreneurship presents an unusual case for sustainability transitions since it does not focus on socio-technical systems but rather on socio-economic aspects. The notion of co-evolution of social practices and technological artefacts as such does not apply. Rather, it focuses on novel organizational forms, dealing with significant complexity - "modulating changes towards sustainability is not an easy task: consequences of environmental problems will occur only in the future, while the complexity of socio-economic interactions makes it difficult to foresee effects of policy measures over time" (Vasileiadou & Safarzynska 2010:1176). Transitions emphasize directed change towards an envisaged goal of sustainability; however, emergence defined as "the interaction between agents or local

elements give rise to complex, unpredictable and self-organizing collective behaviour" (Vasileiadou & Safarzynska 2010:1179).

Our world is characterized by open, complex, hierarchical and adaptive systems. These systems "are dynamic and processual, generating emergent effects and systemic contradictions" (Urry 2010:192). Unlike in a closed system, the idea of endogenous influences and flows as well as exchanges between systems adds a layer of complexity to the analyses. Complex systems do not reach equilibriums; they are "systems in process that constantly evolve and unfold over time" (Arthur 1999:107). The focus is not on presupposed and stable structures but on the "formation of structures" (Arthur 1999:108). Arthur succinctly summarizes what constitutes complex systems: "a multiplicity of potential solutions; the outcome actually reached is not predictable in advance; it tends to be locked in; it is not necessarily the most efficient economically; it is subject to the historical path taken; and […] the outcome is asymmetrical" (Arthur 1999:108).

This focus on systems, however, should not be misunderstood as an exclusive focus on structure. Rather, systemic understanding in this case attempts to bridge the agency-structure dichotomy since it is key to link the interactions of agents with the existing structure and to make both subjects to the investigation since "individuals and structures interact through time in the determination of socioeconomic processes" (O'Hara 2007:8). In this paper, the interdependency between agency and structure is recognized to designate the realm "within which the 'social individual' operates" (O'Hara 2007:8).

4. Power and agency in sustainability transitions

Analysis of power distribution and especially asymmetries is crucial – this is usually excluded from neoclassical economic analysis (Safarzynska and van den Bergh 2010). Since social relations "are necessary for explanations of economic phenomena as individuals" issues of power have to be included in analysis (Hodgson 2013:24). Interactions and institutions are, by definition, saturated with power relations and their "relations are by virtue unequal which leads to process variety and structural heterogeneity within economic institutions" (Wäckerle 2014:261). Power here is understood as "the various forms provoking and enforcing domination" (Wäckerle 2014:262). For understanding environmental governance, power is a crucial component: "environmental institutions determine the choices and opportunities

individuals face as well as the structure of their interactions and interdependences" (Safarzynska and van den Bergh 2010:750).

Wright proposes an open and fluid conceptualization of power, including a less negative connotation. Linking power and agency inextricably, he defines power as "the *capacity* of actors to accomplish things in the world" (Wright 2010:111, emphasis author's own). He deliberately uses the term 'denote' to give the possibility of using capacities to accomplish effects in regard to a specific goal as well as realizing one's interests. As such, Wright refers to both instrumental and structural factors: "it is instrumental in that it focuses on the capacities people use to accomplish things in the world; it is structural in that the effectiveness of these capacities depends on the social structural conditions under which people act" (Wright 2010:112).

The approach to emancipation taken in this paper is grounded in a neo-Gramscian understanding of the world, thus focusing on the mutually constitutive forces of hegemony and emancipation.[1] The latter is, in this line of thought, always based in a counter-hegemonic movement, starting with "the creation of the possibility of alternatives" (Farrands and Worth 2005:55). For Gramsci, this begins in everyday life and ideas: "every revolution has been preceded by an intense labour of criticism", including "the spread of ideas among masses of men who are at first resistant" (Gramsci 1971: 11-12). For emancipation to be successful, the socio-economic setting has to be conducive to transformation while power struggles in the political realm, enable new forms of societal organization. The emancipatory movement ideally consists in a 'historic bloc', that a diverse and well-integrated network spanning different agents and social groups. A successful counter-hegemonic movement will, eventually, establish new ways of thinking and acting.

5. The governance of sustainability transitions

However, since the focus lies on agency-structure interaction, a systemic view is called for. The typology developed by Smith et al. (2005:1499 – *Figure 1*) is employed to gain an in-depth understanding of the transformative potential of Sustainability-driven Entrepreneurship.

[1] Hegemony, in a neo-Gramscian interpretation, refers to the interaction of material capabilities, ideas and institutions: it "is based on a coherent fit between a configuration of material power, the prevalent collective image of world order and a set of institutions which administer the order with a certain semblance of universality" (Cox 1981:139)

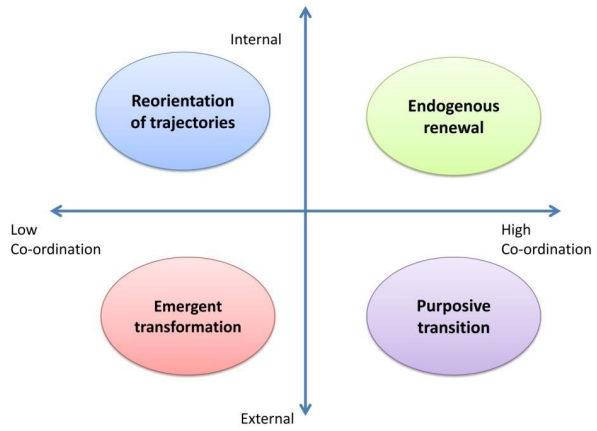

Figure 1 based on Smith et al. 2005

The heuristic device builds on three factors: how well articulated the pressures on the regime are; if resources are available for a transformation of the regime (referring to financial capabilities but also knowledge) and how coordinated these pressures are across the regime (Smith et al. 2005:1492). The central questions asked are, since societal objective are generally ill-defined,

- *what is sustainability to these different actors and how do they go about achieving it?*
- *In what way can Sustainability-driven Entrepreneurship and associated networks aid in driving transitions to sustainability?*

In order to govern transitions, it is crucial to understand "which context for transformations prevails, and which drivers offer the best leverage for guiding change in a desirable direction" (Smith et al. 2005:1498). Essentially, the typology allows for both: firstly, an analytical understanding to identify the context and type of transition; secondly, a normative analysis to prescribe action and governance interventions (Smith et al. 2005:1499). The typologies of transitions are described in more detail the table below:

Typology based on Smith et al. 2005:1500-02	
Type of Transition	**Characteristics**
Endogenous renewal	Pressures are clearly articulated and coordination regarding the response is high; innovation comes from within the regime
Re-orientation of trajectories	Radical re-orientation based on exogenous or endogenous shock; trajectories of change are radically altered while regime actors/networks/institutions remain the same
Emergent transformation	Uncoordinated pressures for change and responses are based on capacities outside of the incumbent regime; origin is often in science/academia or small firms operating outside the regime
Purposive transitions	Deliberately intended and pursued from the outset based on a specific set of goals/ societal expectations

5.1. Data collection

This project takes a normative approach in that "rests on the appraisal of the endpoints of contrasting transition pathways" and on the development of strategies "which foster greater coherence in selection pressures or the regime responses" (Smith et al. 2005:1502). The empirical data collected is thus based on interviews conducted in 15 companies, two educational institutions and five regulatory institutions. The research includes the investigation of firm practices as well as an exploration of the supporting institutional scenery to better understand the transformation processes at hand. The table below gives an overview of the interviews that were conducted in December 2012 as well as in January, February and March 2013.

Overview of Interviews			
Organization	**Interview Partner**	**Short Description**	**Location**
Companies			
Company A	Interviewee A, CEO	NGO and investment fund, sub-companies for FairTrade products	Bratislava
Company B	Interviewee B, Co-founder	Frozen Yogurt Shop	Vienna
Company C	Interviewee C, Co-founder	Coaching and consultancy for Sustainability	Vienna
Company D	Interviewee D, owner	Shop specialized in up-cycling fashion and interior	Vienna
Company E	Interviewee E, founder	Upcycling fashion label	Vienna
Company F	Interviewee F	Co-working space, mainly for social entrepreneurship	Vienna
Company G	Interviewee G, PR & Marketing	Upcycling business with focus on former addicts	Vienna
Company H	Interviewee H, Co-founder	Ethical, organic and fair trade clothing design and manufacture	Vienna
Company I	Interviewee I, CFO and Co-founder	Project Development of Renewable Energy Installations, mainly Solar Photovoltaic	Bratislava
Company J	Interviewee J, project coordinator	Cross-boundary project on renewable energy in AT and SK, awareness raising	Bruck a.d. Leitha
Company K	Interviewee K, CTO and main founder	Development of solar device for signalling water disinfection state of SODIS purified water, for use in developing countries.	Vienna
Company L	Interviewee L, Sustainability and PR Manager	Print Media and Media Developer	Vienna
Company M	Interviewee M, representative and responsible for PR	Self-organized food cooperative	Vienna
Company N	Interviewee N	Development of water saving subirrigation systems for garden to agricultural fields	Vienna
Company O	Interviewee O	Private certification company of organic products for supermarkets	Vienna
Education			
Education P	Interviewee P, Lecturer	Lecturer for the course 'Junior Enterprise', project leader for "BOKU Hub"	Vienna
Education Q	Interviewee Q, course convener and lecturer	Course on "environmental and sustainable management"	Krems
Institutions			
Institution R	Interviewee R, department head	Department of Sustainable Development and ecological funding	Vienna
Institution S	Interviewee S, CEO	Foundation service for academics	Vienna
Institution T	Interviewee T, Sustainability coordinator	Department for the coordination of Sustainable Development	Vienna
Institution U	Interviewee U, Managing Director	Agency responsible for Promotion of Research and Business Development in the Vienna Region	Vienna

6. Discursive analysis of 'Capability to affect change'-narrative

According to Smith et al. (2005:1501-1502), an emergent transformation is characterized by actions outside of the incumbent regime, "often in scientific activity, typically carried out in universities or small firms operating outside existing industries" – both of which is the case in regard to Sue: at the moment, the concept itself is largely carried by academic discourse and the implementation on the ground relies on small start-ups. In addition, the actual impacts of these transitions and whether they catch on remains fairly unclear throughout the process. This, in turn, leads to high levels of uncertainty regarding governance and appropriate policies.

Discourse analysis is the analysis of language 'beyond the sentence' and is not limited to the study of single words or sentences but rather is constituted of studying larger chunks of language as they flow together. Discourse can, in the simplest manner, be understood as "*a particular way of talking about and understanding the world (or an aspect of the world)*" (Jorgensen and Phillips 2002:1). Hajer (1995) observes that "discourse analysis investigates the boundaries between […] the moral and the efficient, or how a particular framing of the discussion makes certain elements appear fixed or appropriate while other elements appear problematic." Discourse analysis owes its importance to the idea that "the rhetoric we use and the form in which we present knowledge are not neutral carriers of meaning but influence the content" (Sayer 2010:11).

Data analysis for this research project is based on narrative analysis meaning that it "studies how people construct their world by conversing about it" (Llewellyn 1999:222). Narratives do not simply reproduce events in chronological order but "evaluate and configure" (Llewellyn 1999:223). As such, narratives are a combination of the data provided by the subject (i.e. interviews) and the theoretical knowledge of the researcher (Llewellyn 1999:225). As such, narrative analysis "transcends the individual voices of the participants" (Llewellyn 1999:228).

In regards to the empirical data, a number of narratives can be uncovered:

Narrative	Central concerns
1. Interpretation/Understanding of Sustainability	Framing of current regime, how landscape pressures are mobilized for strategic reasons, how different vocabulary makes different representations of a system and politics
2. Knowledge networks and role of education	Opening up new ways of doing things in productive and transformative ways
3. Radical vs. incremental innovation	Differing values and visions; focus on pre-defined visions vs. emergence
4. Capability to affect change	Framings are used to coordinate agency and to build new institutions and infrastructure; Econ growth as a fallacy – which tensions emerge from operating within the regime, even if on the fringes?

Narrative 4, "the capability to affect change", is deemed most relevant to the topic of emancipation. Within this narrative, we distinguished three topics: (1) the measurement of SuE activities to capture their value which takes an overarching position over the following two factors; (2) institutional factors; and (3) interdisciplinary stakeholder processes. The measurement of these activities is a key component as singular, financial metrics do not represent all elements that Sustainability-driven Entrepreneurs strive to combine. Additionally, the institutional landscape surrounding these endeavours can be both a supporting and an inhibiting factor. This extends to formal as well as informal networks, consisting of a multitude of stakeholders.

(1) Measurement

Interviewee A best phrased it as he said that profit is not a suitable proxy for evaluating if a firm delivers a sustainable contribution to the socio-ecological community within which it is operating or not. Other proxies are necessary to in order to better capture Sustainability achievements of firms. Interviewee C also highlights the need for a broadening of the capital dimensions that describe the well-being of socio-economic systems and the purposes and goals that organizations define as

important. Company B also emphasized that while making a profit for sustaining their business, they do not see this as the primary motive of their activity.

(2) Institutional factors

In Institution R, there are no indicators to highlight successful cross-sector collaboration: "The whole administration as well as political administration is very much divided into sectors". This extends to how innovation is dealt with: Some of the interviewees refer to barriers for Sustainability-driven economic development on a legislative level. Interviewee T provides an example in regards to closed loop systems, stating that the legislative system does not encourage reusing materials due to conflicting laws in regards to waste and materials. Interviewee C he emphasizes that while post-startup support is strong in the region, there is a lack of support in the pre-incubation phase.

Going further, a number of interviewees (H, O, U) pointed to the discrepancies in global social and ecological standards. Interviewee H: "In the textile industry you can see this very clearly, certain chemicals are not allowed for use within the EU…but there is so-called country of origin concept (*Ursprungslandprinzip*) and if the chemical can be used in the country of production, it can be imported to the EU". The interviewee showed a distinct level of disagreement with this policy: "Politics should have more courage to disagree with the economy, especially in the sense of legislative changes".

From an economic perspective, some of the interviewees highlight the conflicts that have become evident in the process of investing in more sustainable modes of energy production, resource consumption and housing. The discrepancy between individual investment and the collective advantage (through overall resource savings) is nonetheless a large barrier that demands developing alternative modes of financing where the individual interests are aligned with the collective interests. Interviewee U also highlights that there is a need to "step away from investment costs that occur today towards taking a life-cycle perspective into consideration" which is currently lacking in adequate metrics.

(3) Interdisciplinary stakeholder processes

Interdisciplinary thinking is an important dimension that helps fostering new forms of Sustainability-driven value creation. It is clearly evident from almost all interviewees

that their firm activities are integrated within highly interdisciplinary stakeholder processes in order to achieve more Sustainability-driven products or process innovations. Another example is provided by Company H that is part of the *Gemeinwohloekonomie*, an initiative that seeks to change the economic system. The initiative seeks to reform the current economic system through a new way of accounting (*Gemeinwohlbilanz*) that represents all aspects of business rather than only financial metrics. The interviewee pointed out that the participation in the project delivered a network, exchange and contact in regards to fostering more socially and ecologically responsible processes within the firm, providing a link to the lack of adequate measurement of these, currently intangible, effects. The innovation lies not in the new technologies that are more cost-efficient and environmentally friendly but in the formation of organizational constellation that fosters socially and ecologically sustainable value through their activities.

7. Conclusion

As has become evident throughout this paper, Sustainabilty-driven Entrepreneurship is still largely a theoretical and academic construct. However, the empirical study has found encouraging examples of entrepreneurial pioneers that strive not only to provide new ways of doing business but also of thinking and impetus for change. As such, entrepreneurs can be considered agents of change that have begun to provide the basis of a counter-hegemonic, potentially emancipatory movement. It has to be noted, though, that the difficulties that these entrepreneurs remain significant. As the narrative on the capability to affect change illustrates, the prevailing 'grow or collapse' economic ideology with profit as the most important metric to measure business success is a significant inhibitor of truly transformative change. Further research, therefore, could aim at uncovering alternative metrics that potentially already exist and that could be adapted for use in a business setting.

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