

THE RELATIONSHIP BETWEEN TOURISM AND CLIMATE FROM A SUSTAINABILITY SCIENCE PERSPECTIVE – TOWARDS A CONCEPTUAL FRAMEWORK FOR RESEARCH ON THE FUTURE OF TOURISM

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ABSTRACT This paper deals with the problems of the tourism industry and tourism-related research in developing adaptive responses to climate change. A brief description of a typical situation for tourism development introduces the perspective of sustainability science with regards to climate, recreation and tourism. An outline of the reaction of the tourism industry and tourism-related research to global warming and its consequences leads on to a revision in the semantics of research on climate and tourism. In the final section, the paper offers a tentative conceptual framework for research on the co-evolution of climate and tourism.

KEYWORDS *Sociology, conceptual framework, sustainability, co-evolution, adaptation*

INTRODUCTION

Arco is a small, beautiful town in the province of Trento, in the north of Italy. On a hill very close to its centre, a medieval castle dominates the landscape, offering a scenic view of Torbole and Riva del Garda. The two neighbouring towns lie on the northern coast of Lake Garda. Lake Garda has a long tradition as a tourist destination. The ancient Romans already prized the climate and landscape of this region, but for a long time the townspeople of Northern Italy had sought recreation in the Southern seaside villages only. However, when wind surfing emerged as a new sports activity during the 1960s, the northern towns were able to catch up. Since especially the northern part of the lake is regularly exposed to powerful winds, Torbole and Riva del Garda have become hot spots for wind surfing. These communities experienced considerable development, while Arco, located about 5 km north of the lake, lay a short way off the old and new tourist tracks and remained an insider's tip. Witnessing this, the people of Arco became somewhat envious of their neighbours' good

fortune. Arco stayed the small town it had been, with its traditional social structure, surrounded by vines, citrus fruits and olive trees on the one side, and sheer limestone cliffs jutting up like a wall on the other. The only tourists to visit the area were a few rock climbers. They drove straight to the bottom of the rocks and camped in the olive groves without bringing much money into the town.

The situation has changed in the last few years (Bitala, 2007). Today, every weekend thousands of tourists flock to Arco. Since indoor climbing became popular in Germany five to ten years ago, Arco has been invaded by so-called “comfy climbers”. Comfy climbers are not obsessed solely with the rocks they climb; they attend to their creature comforts at the same time as making their first moves on real rock. They are often accompanied by mountain bikers, who also like to take advantage of the Mediterranean flair and food following their activities. Businesspeople in the town obviously benefit from this development, as does the community in general. However, the traditional social structure is changing. Today there is no bakery, no butcher and no convenience store in Arco. The people of Arco have to do their shopping in a shopping centre near Riva del Garda.

The growth of tourism in Arco is also transforming the natural systems. Climbers are dependent on motor transport to reach the routes. Thousands of cars and motorcycles transport mostly German climbers over the Brenner Pass to Arco. It takes less than four hours to travel from Munich to Lake Garda. Like all the other Alpine regions with passes or tunnels, the region surrounding the Brenner Pass is severely affected by traffic and its emissions. Road traffic clearly tops heating and industrial facilities as a source of emissions including nitrogen oxides, particulate matter and carbon monoxide (Siegrist and Thudium, 2007).

How can Arco's growing economy be reconciled with the needs and aspirations of its population and with nature? This is the question at the core of a sustainability science perspective. Starting with this question, this paper concludes with an outline of a conceptual framework for research on the relationship between tourism and climate. It may initially seem confusing that this framework is not the inductive result of the concrete research findings of a climatologist. However, since travelling, organising and selling travel, and doing research on the consequences of travelling are all actions, it might be instructive to consider this issue from the perspective of general action theory. Such rare approaches in the social sciences, which study action as a coevolving system within an environment consisting of other, natural systems, could provide a suitable background for any further explorations of this interdisciplinary field (Parsons, 1978, Law and Hassard, 1978, Urry, 2003, Latour, 2005).

In this paper I present an argument for the relevance of sociological knowledge for understanding the relationship between tourism and climate. In the first section I present a critical overview of recent adaptive responses of the tourism industry (and tourism-related research) to climate change. After analysing this data I conclude section 2 with the proposal that we need a new tool for analysing the relationship between tourism and climate. I suggest solving the theoretical deficiencies of the concept of adaptation by employing the notion of co-evolution. On the basis of these considerations I outline my ideas concerning a conceptual framework for research on the relationship between climate and tourism (or – from a broader perspective – on the relationship between nature and society) in section 3.

DATA: ADAPTIVE RESPONSES OF THE TOURISM INDUSTRY AND TOURISM RELATED RESEARCH TO CLIMATE CHANGE – A BRIEF OVERVIEW

The tourism industry seems to be ambivalent about adaptation to climate change. A survey of tourism experts at the international tourism trade fair ITB Berlin in 2007 shows that the tourism sector is aware of the challenge posed by climate change. Around 90 % of the interviewees believe that tourism will be affected by climate change. Yet there are few constructive ideas as to what could be done about it. When asked about responses to climate change, 34 % have no answer, and 56 % did not respond when asked if they had already developed adaptive strategies in their own area of business (Lund-Durlacher et al., 2007).

Perhaps the tourism industry is ambivalent about adaptation to climate change, because the question of adapting tourism to climate change is ambivalent in itself. On the one hand, it is evident that the tourism industry today plays a leading role in the international economy. With 25 per cent growth in the past 10 years (UNEP and WTO, 2005), it is one of the largest industries in the world, and provides, furthermore, enormous revenues. Since there are few countries that do not function as a significant source and destination of tourism, the tourism industry pledges income for every region, even in developing countries.

On the other hand, it is also evident that the tourism industry does not make any indispensable contribution to humanity's survival. Hence, in the light of the man-made problem of climate change the tourist industry comes under increased pressure to account for its ecological consequences. Several studies have pointed out that tourism is a source of negative ecological impact (Buttler, 1991, Gössling, 1999, 2000, Gössling et al., 2003, 2005, Neto, 2003, Shah et al., 2002, Welford et al., 1999). Tourism accounts for approximately 5 per cent of the total CO₂ emissions (Davos Declaration, 2007). Especially air travel is detrimental to the global

climate, since planes emit mostly in strata of the atmosphere most vulnerable to pollution (Gössling, 2000).

Research on the tourism industry's ecological effects has been a marginal issue for a long time. This is especially true for climate impact research. The relationship between tourism and climate change did not become an issue of concern to the international community until 2003, when it was addressed at the "First International Conference on Climate Change and Tourism" on Djerba in Tunisia. The discussion triggered at this conference has since focused on adapting international tourism to the possible consequences of climate change (WTO, 2007).

Research on adaptive strategies in tourism has focused on maintaining economic structures. Some studies are concerned with adaptation strategies of different countries or regions, for example, Fiji, the Caribbean and the Mediterranean. Regions of snow tourism are of special concern. In general, adaptive strategies tend to focus on adapting buildings and infrastructure to extreme weather, developing weather-independent tourist attractions, and, of course, petitioning the government for support.

Given the detrimental influence of the tourist industry on the environment, especially on the climate, it is striking that the discussion on adapting tourism to climate change is not automatically interwoven with mitigation strategies. As a consequence, it could be concluded that, at the moment, changing mass tourism into more sustainable forms (which would include mitigation strategies for climate change and ecological risks) seems rather a pipe dream.

RULE: PROCEED FROM THE CONCEPT OF ADAPTATION TO THE NOTION OF THE CO-EVOLUTION OF CLIMATE AND TOURISM

Adapting social practices already detrimental to the climate to the consequences of climate change could perpetuate the problem while trying to solve it. This certainly applies to the tourism industry. Since cycles of investment are rather short, it seems to make sense for tour operators and travel agencies to interpret 'adaptation to climate change' in terms of minimizing their economic risk. Moral appeals must fail under these circumstances, because actors in tourism are neither aware of alternative practices nor have any incentives to create alternatives on their own.

We should perhaps raise the question of whether the concept of adaptation is an appropriate metaphor to respond to the challenges of human-induced ecological dangers like, for example, global warming. The concept of adaptation was coined by the biological theory of evolution

(Futuyama, 1990), to which it adds an explanation for reproductive success. A new trait increases the capacity of an organism to cope with environmental stresses and pressures and therefore improves its fitness and chances of survival. It does not provide any notion of an economic system adjusting to the needs of other systems or to requirements for mitigating climate change. Therefore, from the vantage point of the concept of adaptation, there is no reason to search for economic practices with little or no climate impact.

This would be different if we relied on the notion of co-evolution. This concept was also based on the biological theory of evolution. Ehrlich and Raven invented this term in 1964 to describe the influences that plants and herbivore insects could have exercised on each others' evolution (Ehrlich and Raven, 1964). Since the term co-evolution expresses the idea that a system, for example a society or an economy, has to adjust to the requirements of maintaining other systems, it became popular in humanities discourse on sustainable development (Jantsch, 1979, Noargaard, 1994).

Schellnhuber, for example, outlines the idea that sustainability science is “simultaneously the objective lesson on man-environment co-evolution and a subjective co-evolving factor of that dynamic of change” (Schellnhuber, 2001). This means that we have to consider that reasoning and theory-building on tourism and climate change are themselves evolving factors, since, as social endeavours, they constitute an integral part of society. Thus, if we proceed from the concept of adaptation to the notion of co-evolution, this may prompt us to envisage new structures of tourism that are not detrimental to the climate, to our bodies or the livelihood of other species.

RESULTS: TOWARDS A CONCEPTUAL FRAMEWORK FOR RESEARCH ON THE CO-EVOLUTION OF CLIMATE AND TOURISM – A SOCIOLOGICAL APPROACH

One of the main characteristics of human action is its creativity (Joas, 1996). Humans have the capacity to change their behavioural patterns without any pressure or constraint from the environment. We are able to change our behaviour just out of curiosity, just to experiment. Therefore, creating structures of tourism that are not detrimental to the natural environment is by no means as difficult as it may seem on the face of it.

Experiments do not emerge from nowhere. Although action is creative, and therefore essentially individual, some general, uniform factors of action could be identified. General action theory (Parsons, 1978) makes two basic assumptions about action in general (Fig. 1). Firstly, every action is structured by cultural elements, social norms, psychological conditions

and behavioural aspects which are related and vary in every activity. This internal structure allows researchers to describe differences in recreational and tourist activities and explain them by reference to rules created by humans. German tourists behave somewhat differently from British and members of the upper class have different needs on a journey than those of the working class. The reasons for these differences are (probably) not to be sought in biological, chemical or physical facts, but in habits and different societal organisations.

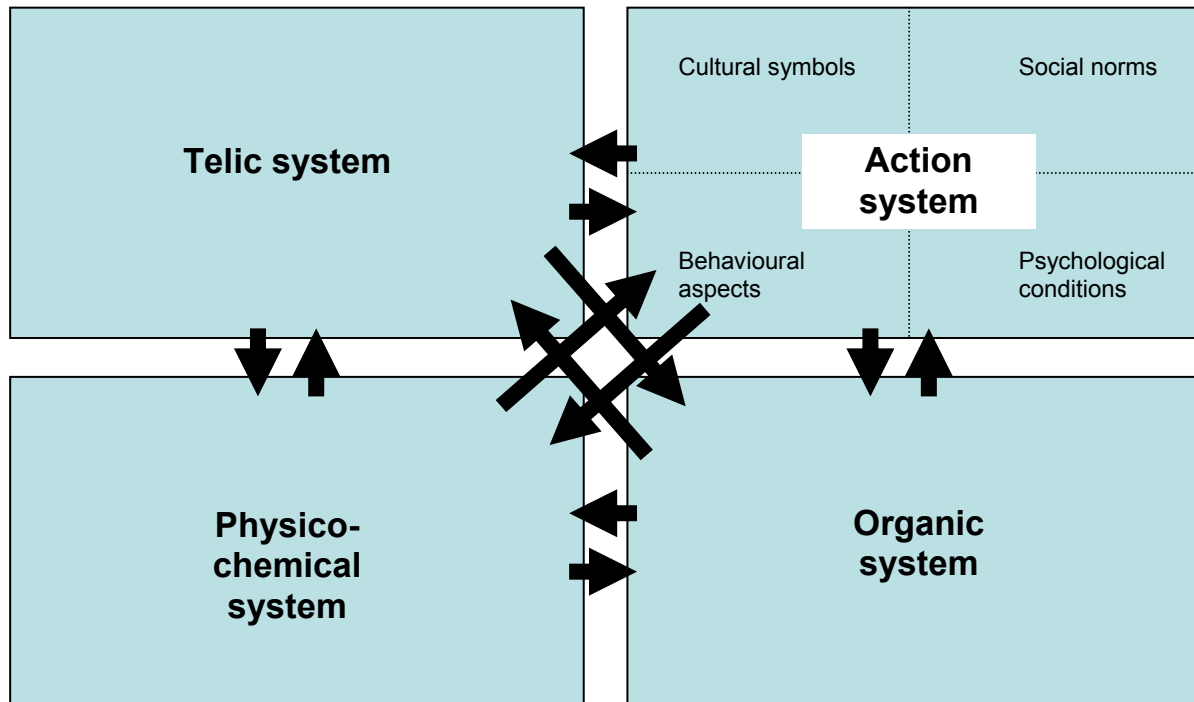


Figure 1: Action, its internal structure and its environments

This leads directly to the second basic assumption of general action theory, which is that every action is context-related. Although the notion of context emphasizes that acting depends on continually changing conditions and possibilities, three different structural aspects of every action can be analytically identified (Parsons, 1978), the physical world, the organic world, and, finally, the ‘transempirical’ or telic world (Fig. 1). From the vantage point of action the physico-chemical system provides action with empirical order. Climate, for example, is an aspect of this system. The human organic system provides action with well-being and health. It reminds sociologists that every action is related to our bodily existence. On the other hand, the telic system provides action with a transcendental order. It consists of signs representing purposes and ends. Action itself is related to its environments by symbolic meaning. All these different systems interact while we act. However, that does not mean the systems have co-evolutionary relationships. The notion of co-evolution should be restricted to those relations

in which systems adjust to the requirements of each other. Of course, climate itself has no needs, but as a factor of human action it might have.

Looking at Tourism as an activity which is coordinated by its internal structures and at the same time related to its environments by interpreting them, we gain a framework for interdisciplinary research in this field. Different tourist activities require different climatic conditions, need different physical training and cause different bodily conditions and are tied to different purposes like self-awareness, freedom or sustainability. Furthermore, under the conditions of climate change we have to add that different tourist activities have different impacts on the climate.

By adopting the concept of co-evolution (instead of adaptation) we have gained an epistemic goal for further tourism-related research. The tourism industry needs information about desirable, possible and non-desirable forms of practice. Research on, for instance, the co-evolution of tourism and climate (Gössling et al., 2005, Becken et al., 2003) is suited to generating knowledge that may help tour operators, travel agencies, tourism organisations, tourism politicians, travellers and tourists to reorganise their practices in order to adjust to the requirements of maintaining other systems.

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