



The Cultural Transmission of Environmental Values: A Comparative Approach

ANASTASIA LITINA^a, SIMONE MORICONI^{a,b} and SKERDILAJDA ZANAJ^{a,*}

^a *CREA, Université du Luxembourg, Luxembourg*

^b *Università Cattolica di Milano, Italy*

Summary. — This paper investigates the hypothesis that individual environmental attitudes are partly determined by a cultural component. Our analysis tackles this issue both theoretically and empirically. In the theoretical section of the paper, we describe a model of intergenerational transmission of cultural traits. In the empirical section, we use survey data from the European Values Study, to empirically identify this cultural component in environmental attitudes. We use a comparative approach that exploits variations associated with European migration flows. Our findings suggest that culture has a persistent and statistically significant impact on the environmental values of migrants: differences in environmental attitudes among migrants can be traced back to social values that persist in their countries of origin. We also show that environmental attitudes are resilient to incentives derived from the external environment: environmental conditions migrants have been exposed to in their countries of origin do not have a significant impact on their preferences when living in the host country. Our empirical findings are robust to a number of alternative assumptions and present interesting dimensions of heterogeneity concerning the cultural transmission process. These results imply that in the presence of multiple environmental problems that require collective action, comprehending the driving forces behind the formation of an environmental culture is critical to effective policy formation.

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1. INTRODUCTION

The profound effects of culture on economic outcomes and the formation of public policies have been at the center of recent debates on the transmission of cultural values. Several economical and societal factors such as fertility rates, female labor force participation levels, and redistribution preferences have been argued to manifest a cultural component that frames individual economic behaviors and ultimately economic policies. In the light of major ecological problems that require immediate collective action, several studies in the fields of anthropology and sociology have argued that accounting for cultural factors is important in reference to environmental issues. Humans possess values that shape their choices concerning the environment (Dietz, Fitzgerald, & Shwom, 2005; Steg & de Groot, 2012). Indeed, facing contradicting preferences (for instance, travel by car or use public transportation), individuals refer to their value systems to make their final decisions. Those who prioritize prosocial values with a positive impact on the environment (environmental values) are more likely to make consumption choices that are environmentally friendly than those who prioritize egoistic-proself values.

Furthermore, barriers to the achievement of consensus on greenhouse gas emission targets for the 2013–20 period within the United Nations Framework Convention on Climate Change suggest that in addition to political or economic factors, a cultural component heterogeneously shapes environmental cultures across country members.

The economic literature has thus far neglected analyses on the role of environmental culture. Defining culture is a challenging task. In this paper, we follow Dietz *et al.* (2005) and Steg and de Groot (2012) by defining environmental culture as the set of environmental values that reflects general beliefs concerning the desirability of environmental conditions. These values guide individual preferences and thus their choices and

attitudes that directly affect the environment. We advance the hypothesis that differences in environmental values across individuals can be partly traced to cultural differences. In particular, we argue that environmental attitudes (e.g., the willingness to pay for environmental causes) are not solely a product of the effects of local environmental conditions on individual attitudes but are also a product of cultural orientations.

Our analysis tackles this issue both theoretically and empirically. In the theoretical section of the paper, we place Bisin and Verdier (2001) model into an environmental context involving migration to serve as a theoretical background for the transmission of environmental values. In our study, these values determine disutility from pollution. Agents consume goods whose production causes pollution. Each community is composed of two social groups (natives and migrants) which defend specific environmental values that yield differing levels of disutility from pollution. For both communities, their offspring may acquire cultural values of the other group via peer socialization (indirect transmission). Thus, if individuals wish for their cultural values to prevail in a new environment, they must invest in family cultivation (direct transmission). We find that the environmental trait is successfully transmitted, either directly or indirectly, when the direct transmission of the environmental traits acts as a cultural substitute to indirect transmission, as shown in Bisin and Verdier (2001).

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The empirical analysis is designed to test the broad hypothesis that environmental values may be culturally transmitted across generations. To establish our testable hypothesis, we use survey data from the European Values Study (EVS). The EVS dataset includes data on 45 European countries as well as information on the attitudes, beliefs, and preferences of Europeans towards a range of issues (e.g., the environment, religion, politics, the economy, etc.), allowing us to identify first- and second-generation migrants. As a measure of individuals' environmental values, we focus on individuals' willingness to pay for environmental causes.¹

Our empirical strategy is based on a comparative approach that involves the use of variations associated with international migration flows in identifying the causal impact of culture on individual preferences (see [Fernández, 2007](#)). A comparison between immigrants from different countries reveals the existence of an environmental culture that is formed and that persists in a migrant's country of origin. Our focus on immigrants allows us to distinguish cultural effects from other (economic and environmental) incentives migrants are exposed to in their destination countries. This approach allows us to account for the endogeneity of culture with respect to the environment, prompting a causal interpretation of our results.

Our findings suggest that culture has a persistent and statistically significant impact on the environmental values of migrants: differences in environmental attitudes among migrants can be traced to a persistence of social values in their countries of origin. We also show that environmental attitudes are resilient to incentives derived from the external environment: environmental conditions migrants have been exposed to in their countries of origin do not have a significant impact on their preferences when living in the host country.

Our empirical findings are robust to a number of alternative assumptions and present interesting dimensions of heterogeneity. A first dimension relates to degrees of cultural integration: migrants who appropriate certain important aspects of the host culture (e.g., language or laws) are also more willing to retain the environmental values derived from their own culture. This trend is well recognized in cross-cultural psychology and it is referred to as an "integration strategy" i.e., a strong association with one's host and origin countries ([Berry, 1997](#)). A second heterogeneity dimension concerns the cultural transmission process: immigrant networks and families both serve as key cultural transmission channels; moreover, the quality of transmission processes (e.g., as measured by intra-family relationships) and paternal (relative to maternal) influences play a pivotal role.

Overall, this paper addresses an intriguing and largely unexplored issue in the literature. In doing so, we refer to pioneering contributions such as [Boyd and Richerson \(1976\)](#), [Cavalli-Sforza and Feldman \(1973\)](#), we use standard tools such as the [Bisin and Verdier \(2001\)](#) framework of cultural transmission and the epidemiological approach presented by [Fernández \(2007\)](#). Nevertheless, and despite using standard tools, our findings are novel and illuminating in regards to mechanisms associated with the transmission of environmental values. The next question to answer concerns why such a question is interesting. Our findings have two main implications. First, they suggest that governments should encourage social learning activities that foster the emergence of an environmental culture that can be transmitted from one generation to another. This is crucial to the sustainable and long-term pro-environmental future of our planet. This issue has become even more critical in an era where international migration flows are rather vast, leading several different cultures to

coexist in many countries. Second, international environmental agreements are reached by leaders who represent the social values that prevail in part among citizens and in part among the policy elite of each country ([Henry & Vollan, 2014](#); [Henry, 2011](#); [Sabatier & Weible, 2007](#)). Therefore, understanding the driving forces behind the formation of an environmental culture is critical to reaching international consensus.

The paper is organized as follows. Section 2 explores the related theoretical and empirical literature and highlights the contributions of our paper. Section 3 presents a formal model that explores the transmission mechanism. Section 4 presents the empirical analysis. Section 5 concludes.

2. RELATED LITERATURE

Our research adds to a growing body of economic literature that examined cultural transmission mechanisms. Social scientists ([Campbell, 1965](#)), biologists, and psychologists ([Boyd & Richerson, 1976, 1983](#); [Cavalli-Sforza & Feldman, 1973](#)) have been the pioneers of this approach. This literature has put forward the hypothesis that cultural transmission can be modeled as a process of inheritance.² More specifically, [Boyd and Richerson \(2005, p. 400\)](#), argue that certain cultural processes are analogous to processes of natural selection, mutation, and drift (random forces, decision-making forces, and natural selection operating directly on cultural variation), which shape evolution and thus the transmission of culture from one generation to another. Importantly, this literature finds that natural selection effects on cultural variation may favor transmission via peers rather than parents. A seminal economic work by [Bisin and Verdier \(2001\)](#) in assuming an endogenous process of transmission, finds a similar process referred to as cultural substitutability.³ In the context of environmental economics, some theoretical studies have explored the impact of social norms on the environment. [Sethi and Somanathan \(1996\)](#) examined the endogenous evolution of social norms in a local common-property resource setting using evolutionary game theory. They find that with a sufficiently large number of individuals who act as enforcers, a society can evolve into a norm-guided society rather than into an individualistic one. [Schumacher \(2009\)](#) investigates cultural dynamics of environmental preferences (as in [Bisin & Verdier, 2001](#)), including feedback effects of pollution on cultural dynamics. Pollution affects the proportion of the two cultural traits that exist: greens and browns. Dynamic transmission is such that green values are less likely to be transmitted intergenerationally for low levels of pollution, whereas they are likely to be transmitted for high levels of pollution. [Schumacher \(2015\)](#), rather than assuming exogenously given environmental values, studies the endogenous formation and transmission of environmentalism using an overlapping generations model with Leontief preferences. This represents a novel approach employed in cultural economics. It pushes forward the notion that environmental culture is not only transmitted intergenerationally, but is also shaped by resources released for public investment on environmental-friendly education (depending on how wealthy an economy is). In a similar fashion, [Bezin \(2015\)](#) builds an overlapping generations model of environmental externalities and capital accumulation. The author argues that individuals have incentives to contribute to the improvement of environmental quality, as their final aim is to promote environmental attitudes. Hence, in this framework, environmentalism is transmitted and evolves according to the conditions of the environment, which ultimately determines the level of private contributions.⁴

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