

ATACD

The only thing certain about culture is that it changes. Drawing inspiration from mathematical theories of topology, networks and complexity, the ATACD project will create a new way of looking at social change that emphasises links, driving forces and modes of change – common factors in all cultures – rather than cataloguing different types of culture, as previous work has tended to do. With participants ranging from physicists to artists, ATACD will explore not so much what a culture is as what it can become.



In the mathematical discipline of topology, a coffee cup has the same form as a ring doughnut. The defining feature of each shape is its single hole; in the case of the cup, it's the handle. Since a cup made from soft clay can be shaped into a doughnut without closing up the hole or creating a second one, topologists say that the two shapes are equivalent.

That may sound obscure, but the ability to distil the essential shapes of objects gives topology many practical applications. Networks, for example, tend to have similar shapes whether they describe relationships between people, roads, computer systems or species. As a result, topology has become important in many areas outside mathematics, including geography and the social sciences.

The ATACD project draws on the principles of topology to address the dynamics of culture. Previous studies, say the project partners, have

treated culture as a static thing to be described and classified, and ignored the fact that cultures are always changing. ATACD's topological approach will look at how this change happens – the cultural equivalent of morphing a cup into a doughnut. They aim to describe not what a particular culture *is*, but what it could *become*.

A new field with origins in many

According to the ATACD partners, topology is useful in the study of cultural dynamics because it captures almost every facet of what we understand by continuity.

A topological description of a network concentrates on the links between the nodes rather than on detailed descriptions of the nodes themselves. In the same way, the topological approach to cultural dynamics studies not the substantive elements of culture but their links, relations and transformations.



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Every aspect of culture is subject to forces of change and, even when a particular culture remains static for a time, this is best understood as a special case of change.

Some elements of topological thinking have already been used in the study of social change, but only in a limited way and within the confines of individual disciplines.

The ATACD project is much broader; it aims to create cross-disciplinary techniques and patterns of thought that can transform our approach to the study of cultural change. As befits such an ambitious aim, ATACD has secured the involvement of 20 partner organisations across nine countries.

Academic disciplines represented include sociology, psychology, women’s studies, post-colonial studies, art and media, management, politics, complexity and information theory, neuroscience, web-based information systems, mathematics and artificial intelligence. As well as universities, the institutional partners include Sony France and V2 Organisation, a Dutch electronic arts foundation. Individual participants range from internationally renowned professors to talented young researchers at the cutting edge of their fields.

Learning from one another

Bringing together such a diversity of disciplines is not without its own unique challenge. Even among researchers who study it, defining ‘culture’ is the subject of vigorous discussion. The work carried out during the project will therefore concentrate on fostering and maintaining collaborative relationships between the participants

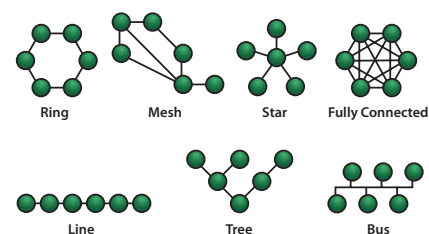
with the help of colloquia and residencies, culminating in a conference that will also raise the public profile of this new area of study.

The work of ATACD falls under four headings, each of which is the responsibility of several consortium members: markets and innovation; space, transition and migration; new technologies, including the Internet; and mind, memory and language. All these areas are considered to be important for the successful management of cultural change at national and local government levels, as well as within industry.

Much of the project partners’ work will focus on learning from one another and sharing existing techniques. There will be a series of colloquia and nine residencies that will allow researchers to visit partner institutions to learn and share their knowledge of how to use topological techniques.

Towards the end of the project, a three-day conference will bring together everything the project participants have learned during the previous three years. As well as presenting research results, the conference will also show industrialists and policymakers what the new techniques can do and how they relate to other ways of studying culture.

The study of networks has revolutionised our understanding of many fields of science, including human relationships. ATACD will take this to a whole new level by revealing the topological basis of culture. In a world that is in a state of constant change, it will help us cope better by understanding how cultures evolve.



AT A GLANCE

Official Title

A Topological Approach to Cultural Dynamics

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Project cost

€ 643 797

EU funding

€ 643 797

Project reference

Contract No 043415 (NEST)

Since topology analyses the qualitative properties of figures, it may be able to make meaningful statements about the culture of their realities as well.