
Athens 2004 Olympiad: systems ideas to map multidisciplinary views – reporting on the views of the host community

Stefanos Dodouras and Philip James

Research Institute for the Built and Human Environment, School of Environment and Life Sciences, University of Salford, Greater Manchester, M5 4WT UK

Email: stamkos_d@yahoo.co.uk; P.James@salford.ac.uk

Website: <http://www.els.salford.ac.uk/urbannature/research/team.htm>

Abstract:

Real-world situations are often ill-defined and involve vast amounts of vague data, factors that together weaken communication between actors and make their management even more complex. Systems thinking as a means of tackling complex problems can bring together multidisciplinary work, understand and operationalise the problem in question. Mega sport events provide an ideal situation, both complex and time constrained, in which to test the integration of different methodologies. Using a series of public opinion polls related to the 2004 Olympiad, the lack of a common framework associated with the management of great regeneration projects is revealed. Fuzzy cognitive mapping as a tool for mapping diverse views can provide some initial answers to the question of how to improve communication between heterogeneous groups of stakeholders.

Keywords: communication, mega sport events, opinion polls, fuzzy cognitive mapping

Introduction

Thinking about the future in a systematic way requires a flexible framework, where alternative approaches can be identified and appraised in order to make management more effective. Attempting to understand the complexity of real world situations can be a difficult task. Asking different actors to express their views on a number of issues can lead to a wide array of responses. A more dynamic way of presenting the sustainability implications of complex projects could encourage participation and collaboration between different activity centres (Checkland, 1999). Early systems thinking methodologies did not include human parameters as part of the situation, and as such the increased number of action-reaction relationships involved in complex situations prohibited the planning and decision-making processes from utilising these relationships (Checkland, 1995). These human parameters are constantly evolving and changing; as such, they should not be treated as a fixed set of things but rather as ways of constructing and utilising knowledge (Richardson *et al.* 1989). In line with the previous points, it can be argued that public support is the foundation upon which

successful events rest, otherwise problems are particularly likely if the event is superimposed on the hosts or narrow interest groups have control over it.

Mega sport events have emerged as a significant catalyst of regeneration and renewal at local, regional and perhaps national level. In these respects, few, if any, events can match mega sport events. However, a critical challenge in the modern era is to preserve the values associated with sport while at the same time addressing the association between hosting a mega sport event and the concept of sustainable development (IOC, 1997). Thus, the whole picture of such great projects cannot be obtained unless the different types of impact, and their interactions, are adequately explained and communicated to all stakeholders. Systems thinking can offer additional useful insights for management research, over and above traditional research techniques. A systems approach can bring improved results from a multidisciplinary problem since it is suitable for scenario analysing and reduces the possibility of some aspects being stressed more than others (Wolstenholme, 1990).

When it comes to cities competing to host mega sport events, it is the size of these short-term attractions that leads to large-scale impacts. Complexity is such that formal models are required to analyse effectively the effects of any decision in strategic management issues (Lyneis, 1980). In principle, system dynamics can be used to deal with relatively complex problems and mega sport events belong to this category. Also, fuzzy cognitive mapping can work as an integrated appraisal system because it is simple and avoids formal mathematical terminology that can hamper communication. General Systems Theory (GST) emerged as an effort to develop a mathematically exact theory in the non-physical sciences (Bertalanffy, 1968). However, the discipline of mathematics is not the most sufficient tool to lift the communication barrier because the formalisation of empirical phenomena and the representation of real world situations with numbers do not always tell the truth (Kramer & Smit, 1977). Checkland (1999) suggested that the idea of systems thinking has not failed just because GST has failed in its application, but it has flourished in a way that enabled researchers to examine and tackle the 'messy' problems of management. The meta-analysis of the opinion polls reported here provided useful insights on the development of a temporal and flexible appraisal system.

The 2004 Olympiad was expected to kick-start the host economy and direct more growth, through regeneration and development, to areas outside the host city (ATHOC 2004, 1999). Other plans included the formation of environmental strategies, the transformation of the transport network, the documentation of land use policies, the construction of new infrastructure, the creation of new employment and the increasing demand for new residential areas. The 2004 Olympics acquired a distinctive importance for several reasons (Karamichas, 2004) such as the debt owed by the international community to allow the event to return to its birthplace; the opportunity to restore Greece's place in the international political arena; the effort to re-establish the pride among the Greeks based on their history; the construction of new infrastructures; and the fact that Greece is the only country of such size and economic potential that has ever staged such a large event. When the sustainability impacts of mega sport events are likely to be significant not only at a local but also at a national level, it is important to gather the views of those living outside the borders of the host city. A series of opinion polls have been examined in order to illuminate the dynamics of inter-actor relationships that are important to the hosting of mega sport events. Based on the dimension of public support, the authors explore the problem of integrating complex issues, with a view to

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testing the applicability of fuzzy cognitive mapping – which is the central focus of this paper – as a Soft Systems Methodology (SSM).

Methods

The use of case study research is a valuable method at all stages of the theory building process and can assist in understanding complex issues (Yin, 1984). The choice of 2004 Olympiad as the focus for addressing the questions raised in the introductory section of this paper was justified on the grounds that it provided an appropriate example of a complex development project in which the role of systems thinking could be explored.

A continuous data collection approach (i.e. 1972-2004) was adopted and, hence, the case study method was an *ex-ante* analysis of the 2004 Olympiad involving an investigation of primary sources collected over three decades. The meta-analysis of the polls listed in Table 1 assisted in understanding what the general public emphasised as the main issues of concern associated with the hosting of the event in Athens and hence leads to the development of a fuzzy systems model for this case study.

A margin of error results from the process of selecting the sample. Yet, emphasis on the sampling error does little to address the wide range of other opportunities for something to go wrong (Sudman & Bradburn, 1982). Opinion polling is accepted as an inexact science, and it is sensible to weigh up the results of several different polls when calculating the most likely outcome. So, it is noteworthy that the size of two polls may be regarded as small; yet, that is unimportant because high response rates do not necessarily improve the precision of survey result (Jones & Lang, 1980) and, most importantly, the subject matter was to recognise the complexity of mega sport events, rather than to criticise the decision to host the event in Athens.

Date	Author	Sample Size	Details/sources
1996	Athens 2004 Candidate Committee	1000 people residents of the Greater Athens Area selected randomly	The survey was conducted according to the code of conduct specified by the Association of Greek Market & Opinion Research Companies, the European Society for Opinion & Market Research (ESOMAR), of which MRB HELLAS is a member
1999	Dodouras	300 people non-Athens residents selected randomly	The survey was conducted within the bounds of a 3 rd year undergraduate project, Department of Economics, Manchester Metropolitan University
2001	To Vima	1649 households selected randomly – National Level	The survey was conducted according to the code of conduct specified by the Association of Greek Market & Opinion Research Companies, the ESOMAR, of which KAPA Research is a member
2003	Eleftherotypia	2000 respondents selected randomly – National Level	Athens News Agency

Date	Author	Sample Size	Details/sources
2003	Eleftheros Typos	2000 respondents selected randomly – National Level	Athens News Agency
2004	Dodouras	350 people non-Athens residents selected randomly	The survey was conducted within the bounds of a PhD research, School of Environment & Life Sciences, University of Salford

NOTE: Age of respondents: Over 18 years old

Table 1: A series of public opinion polls.

In addition, a wide range of primary data was available from organisations related to the 2004 Olympics, i.e. ministries, local authorities and other institutions. Also, information about the preparatory work and the hosting of the event was collected from the Athens 2004 Organising Committee (i.e. ATHOC 2004), local authorities, published opinion polls and other relevant agencies. Together these sources provided a rich picture within which a meta-analysis of the opinion polls could be conducted.

The data from the public opinion polls was analysed using computer statistical techniques contained in Windows Excel. Response categories were developed to facilitate the analysis, detect any errors in data and to make comparison among variables. In parallel to the analysis of these primary sources related to the 2004 Olympiad, a significant amount of historical data and other sustainability variables related to mega sport events were reviewed critically.

Results

The event enjoyed the support of the Greeks from the very beginning. In 1996, an opinion poll conducted on behalf of the Athens 2004 Candidate Committee revealed that 96% of Athenians supported the bid. In 1999, another poll showed that a small majority of the people of the Greek periphery waited with anticipation for the event (52%), whereas in 2004, that percentage has risen to 68% (Dodouras, 1999; 2005). Nevertheless, the percentage of agreement varied when the sample size was stratified (e.g. see Figures 1, 2 & 3). In 1996, the percentage of agreement was higher among respondents aged 65+ (98.9%), those with secondary (97.8%) education and low-income earners (99.0%). In 1999, the percentage of agreement was higher among respondents aged 28–40 (59%), those with elementary education (75%) and high-income earners (71%). In 2004, almost half of the respondents (49%) stated that the main sustainability impacts of the event would not be positive; only 13% argued that the event would positively affect the entire country of Greece (Dodouras, 1999; 2005).

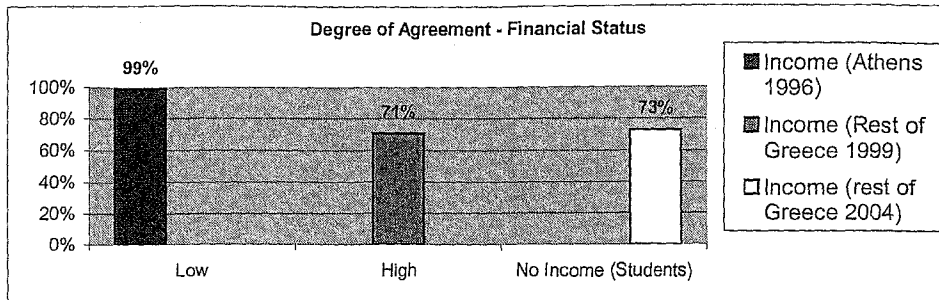


Figure 1: Athens 2004 - Degree of Agreement.

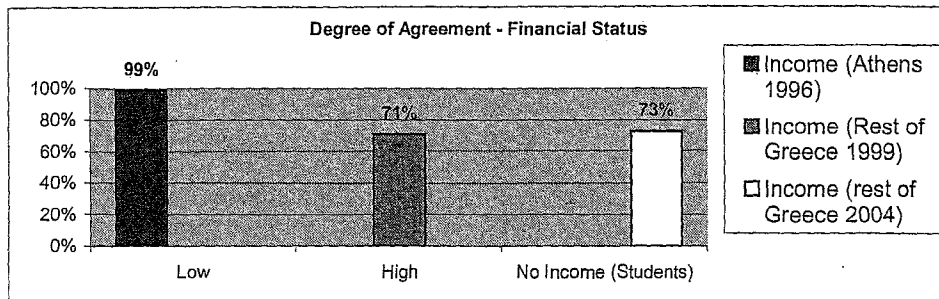
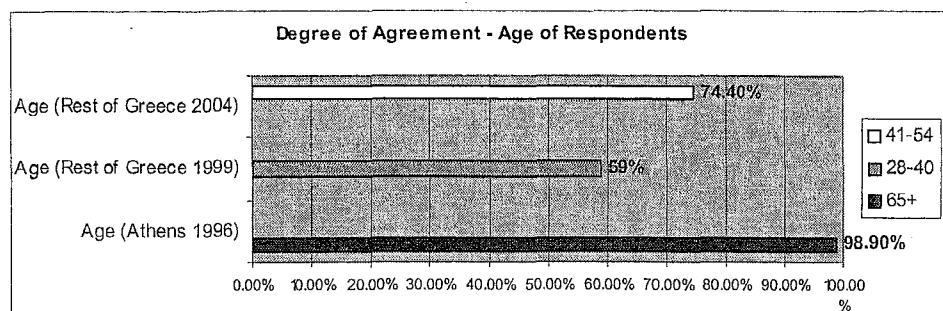


Figure 2: Athens 2004: Degree of Agreement - Income.

At the start of the pre-event period, concerns were expressed about the alarming regional imbalances in Greece and massive commercialisation of the Olympics; yet, the views of the general public, which were gathered occasionally during that period, showed that the Greeks were still in favour of the event mainly because of the potential economic benefits (TA NEA, 1997). In 2001, an opinion poll conducted by KAPA Research and published in TO VIMA, a widely read Greek newspaper, affirmed that most Greeks acknowledged that during the last two decades the country has made significant progress in sports and culture, but still lacks adequate health and education systems, while the division between the social classes has expanded (Lakopoulos, 2001). In 2003, two opinion polls were published in two popular national Greek newspapers. The first in *Eleftheros Typos*, a centre-right newspaper, revealed that the public ranked the total cost, the environmental impacts and the construction of new infrastructures as their main areas of concern (Demertzis, 2003). The second poll, published in the centre-left newspaper *Eleftherotypia* (2003), revealed that 40% of the respondents were little or not interested at all in the event, while only 36% of them believed that it would benefit the host country. At the same time and after examining a series of opinion polls, Demertzis (2003) argued that contrary to the rising confidence in the timely completion of projects and a gradual improvement regarding environmental concerns, confidence in the transparent management of national and EU funds fell as time moved towards the initiation of the Olympics (Table 2).

Figure 3: Athens 2004: Degree of Agreement – Age⁷.

CONCERN EXPRESSED	June 2003	DECEMBER 2002	JULY 2002	DECEMBER 2001
Total cost of the Games	66.4%	61.4%	60.1%	61.6%
Environmental impacts	35.8%	38.0%	37.1%	41.3%
Safety issues	33.4%	35.4%	36.8%	41.3%
Timely completion of athletic installations' construction	27.7%	34.4%	36.6%	44.4%
Timely completion of transport projects' construction	26.7%	31.3%	31.9%	42.5%
Capacity to accommodate visitors and athletes	20.2%	24.2%	27.5%	34.4%
Involvement of volunteers	19.0%	21.0%	22.9%	35.6%

Table 2: Olympiad 2004 – The main areas of concern as expressed by the public. (Demertzis 2003)

Similar concerns were identified in the views of the participants of the 2004 survey. When they were asked to decide which of 'environment', 'economy' and 'society' would be most significantly affected by the event, the majority replied that the 'environment' (63%) and 'society' (66%) would be positively affected in contrast to a perceived negative effect to the 'economy' (65%). Correspondingly, most of those who argued that 'society' would be positively affected suggested that this would happen during the event at a national level (34%); the majority of those who stressed that the Olympics would adversely affect the economy believed that this would be felt at a national level during the post-event period (78%), whereas 24% of those who believed that the environment would be positively affected stressed that this would happen at the regional level during the post-event period (Dodouras, 2005).

⁷ NOTE: Age groups 18-27 & 55-64 are not listed because their degree of agreement was not high enough.

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Consultation and participation involve information sharing among and between multidisciplinary teams of experts, decision-makers and the public. A systematic approach to integrated appraisal is seen as a process for striking a balance between the different aspects of sustainable development (Pope *et al.* 2004). However, the participants of the 2004 survey highlighted the lack of communication during the different stages of the project (Figure 4) and revealed the need for a new integrated approach (Figure 5), with 49% of respondents indicating that a more comprehensible way of presenting the sustainability implications of mega sport events could encourage participation and enable the public to realise the risks involved (Dodouras, 2005).

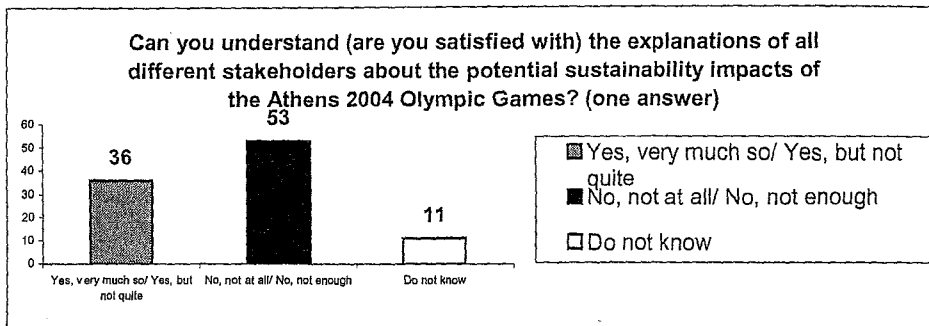


Figure 4: Communication of sustainability management issues.

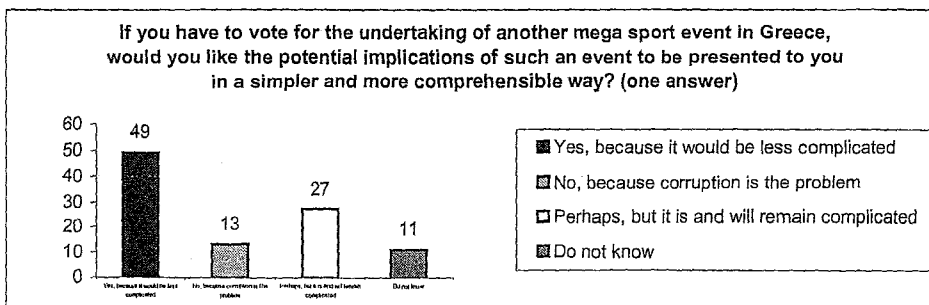


Figure 5: Need for a new approach to presenting sustainability implications.

Discussion

From a general project management point of view, great urban development projects are influenced by politicians, advised by economists, managed by engineers, opposed by environmentalists, and sponsored by the public and private sector. Urban places are continuously changing and changes contribute to the complexity of the issues with which the actors involved must deal. Decision-makers are faced with the interplay of economic, technical, political and other factors, and make decisions that may or may not be

compatible with either way of thinking; this implies that there is a need to find better ways of improving communication between different activity centres.

Nevertheless, the relationships between the changing variables of such situations are not always known. The subject matter of this paper is to what extent these objectives are understood and communicated in the making of a decision. A series of public opinion polls, which were conducted over a period of eight years (Table 1), assisted in gaining useful insights. This meta-analysis revealed that the objectives of mega sport events are not always acceptable; the consultation process is not always reliable, and that the strategic plans formed are not always comprehensible. System dynamics can be used to deal with a lot of relatively complex problems because of its flexible, temporal and participative nature (Checkland & Scholes, 1999). It can describe situations where factors are not so unambiguously defined, bring new players into the scene, and seek to explain several fuzzy areas where these factors are in continual evolution between different stages so that the planning and decision-making processes will not be open to dispute.

Mega sport events must be seen as complex systems that perform in ever-changing reality structures, where a number of different sustainability objectives interact and the stakeholders involved represent their own interests (e.g. Figures 1, 2 & 3). This can be seen by the compound nature of the planning and decision-making processes, where no formal management models exist, no unambiguously defined preconditions are established and there are no optimal solutions because the project activities are interdependent and their sequential or simultaneous execution may affect the overall outcome (Dodouras, 2005). The Athens 2004 Olympics gave rise to a wide array of conflicting aspirations, keen criticisms and cautious assumptions as regards the present and the future of the host community. The analysis of the opinion polls reported in this paper led to inconclusive outcomes as to whether the environmental issues turned out to be 'non-issues', whether the economic forecasts were too ambitious, and whether the event's legacy has really benefited the hosts (see Table 2).

Useful insights are provided on the evolution of the main trends of the views of the local community with regard to the 2004 Olympiad. Analysis of specific themes that were extracted from all the opinion polls does not subordinate any criticism regarding the venture. Rather, it strongly disapproves of the huge cost increases, degrades the management model and highlights the lack of a common framework. In general, analysis of the public opinion polls provided overwhelming evidence of the complex nature of the Olympics. It revealed integration and communication as the key features of the management of great regeneration initiatives and led to the creation of a soft systems model of sustainability impacts.

Limited participation, poor communication and lack of integrated approaches were very common words among the views of the respondents of the opinion polls. As modern society has become more culturally and technologically sophisticated, the issue of little democratic input (Roche, 1994) was a sad fact for Athens. This means that democracy is not functioning properly, as a result the understanding of complex phenomena cannot be developed and, therefore, it is not possible to make well-informed decisions. Apparently, straightforward thinking cannot eliminate the complexity of issues. Rather, there is a need to examine the components of real-world situations as actors that interact and play an important role in forming existing and future conditions. Developing scenarios through a process of participative systems thinking modelling are not predictions but they are devices for communicating distinct perceptions about alternative futures (Huss & Horton, 1987). The polls analysed here highlighted the lack of a common framework and the need to develop an integrated system that will enhance multidisciplinary communication (Figures 4 & 5).

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The creation of a dynamic learning environment could imply that the evolving elements of complex situations would be efficiently appraised and communicated. Such a system might be helpful to understand previous and future events. In the case of Manchester 2002 Commonwealth Games, for example, capital projects and induced investment were directed to the construction of new infrastructure, urban regeneration schemes and other developments (Manchester City Council, 2004). Such concerns showed the contribution that sport could make to the broader policy agenda; yet, in the post-event period the British Olympic Association stated that London is the only British city capable of launching an Olympic bid (Walker, 2002). A year prior to the IOC's decision for the host city of the 2012 Olympics, the British Sports Minister, Richard Caborn, pointed that there are many examples of host cities (e.g. Barcelona, Sydney, etc.) that had developed through sports and the 2012 Olympics could create the necessary preconditions for the benefit of the local community in similar fashion. However, Times Columnist, Simon Jenkins, argued that the Olympiad is a glorious event but there is not such a thing as 'sustainable Olympics' and, if successful, London would have to go through two weeks of 'pandemonium' at vast economic, social and environmental expense for the privilege of this glory (BBC Radio 4, 2004).

The urgency for compromise between socio-economic and environmental objectives is imminent, but the extent of its significance, it would seem, has not yet been realised. Multidisciplinary action is required for any great regeneration and development project but for it to function, improved communication and collaboration are essential prerequisites. If current knowledge and the real concerns of the public are not incorporated into the appraisal process, then just the experts' views on what the future directions are or should be are unlikely to lead to more understandable outcomes.

Integrated impact appraisals should not seek to utilise the knowledge and experience of a few stakeholders but rather to arrive at qualitative judgements based upon the feedback of multiple individuals. A new system, therefore, must be capable of meeting complex challenges, compatible with sustainability principles and adaptable to temporal and spatial particularities. For such a system to be innovative, quality of thought rather than quantity of information is an essential prerequisite. By moulding these requirements into explicit characteristics of fuzzy cognitive mapping, it can then be considered as a decision support tool for different disciplines, which would not predict but shape the future. The ability of fuzzy cognitive mapping to utilise vague information and aid the planning and decision-making processes more explicitly could result in the formation of clear targets, integration of sustainability concerns in different policy areas, increased participation and improved communication in an environment of trust, systematic monitoring of activities, and improvement of reporting and review mechanisms. The use of SSM in the 2004 Olympiad case study emphasised the importance of the continuing efforts to integrate multidisciplinary issues during the impact appraisal process, i.e. interactive, qualitative, participative, accessible, temporal and unidirectional approach in communication. Qualitative analyses often suffer from biased preferences, but the previously mentioned characteristics of SSM are key tools, in themselves, to deal with such challenges.

Arguably, mega sport events can encourage regeneration schemes, but if policy decisions are rushed then the events in themselves cannot guarantee further development. A new integrated appraisal system should seek new understanding by integrating the knowledge of those involved, create a mutually shared context within which micro-decisions can be made and recognise how issues shift and how that shapes debate. Systems thinking based on the concepts of fuzzy logic might provide the basis for complex situations to be examined and approached as qualitatively as possible and thereby provide the framework for the different

perceptions to be explained and be useful in improving communication and promoting sustainable development. Fuzzy cognitive mapping can have potential applications within the planning and decision-making processes of complex situations because it could transform the current structure of impact appraisal and, consequently, affect the future generations of impact assessment. Fuzzy concepts could be used as a prevalent and effective strategy that would facilitate the interpretation of complex ideas, making them comprehensible and communicable between different disciplines.

Soft systems modelling makes it possible to communicate ideas and elaborate possible lines of action, because it identifies and describes several issues that are based on limited information (Laukkanen, 1990; Fiol and Huff, 1992). Also, it allows clarification and structuring of thoughts, so that information could be transformed into explicit knowledge and thus accessible for analysis and reflection (Stubbart, 1989). Swan (1997, p. 193) suggested that *...it would in any case be impossible for any cognitive mapping technique to reveal an individual's entire complement of implicitly held beliefs even for a particular problem domain, regardless of how sophisticated the technique is....* SSM has been around for years but its domain of applicability has not been fully realised. How different actors must focus and operate in constantly changing environments requires significant change from the status quo and will mean the difference between which become dinosaurs and which become dynamos. Soft systems modelling based on fuzzy concepts can be considered as a new integrated appraisal system, providing a common language and a shared vision. Work has been carried out to explore this concept and is reported elsewhere (Dodouras, 2005).

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