

**Social Impact Assessments, theory and practice juxtaposed – Experience
from a South African rapid rail project.**

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Abstract

The field of social impact assessment (SIA), having been under the influence of environmental impact assessments (EIA), has only recently developed theory and methodology more specific to the study of sociological phenomena. Consequently, criteria against which social impact assessments can be evaluated and examples of the application of this theory and methodology to practical situations are somewhat rare.

A recent study provided an ideal opportunity to examine the application of developing theory and methodology to a practical situation. The study was undertaken to assess the impact of a proposed rapid rail link system linking Johannesburg, Pretoria and Johannesburg International Airport, South Africa. This paper critically examines the application of existing social impact theory and methodology to this project, and highlights some of the advantages gained through the process as well as the difficulties faced by the assessors. Suggestions, aimed at improving the synergy of theory and practice when undertaking future social impact assessments, are also generated.

Keywords: social impact assessment; environmental impact assessment; practical application; South Africa; developing environment; rapid rail system; interdisciplinary; engineering; values and morality; NIMBY.

Introduction

The nature of socio-political change within the Southern African context is such that, of late, the issue of the impact of projects on communities has become a sensitive one. Despite this, as is the case in some other parts of the globe, (Burdge and Vanclay, 1995; Burningham, 1995; Becker, 1997; Barrow, 2002; Burdge, 2003) greater attention is still being given in South Africa to broader environmental issues rather than attempting to balance the focus to include social concerns (Cock, 1994). In this sense current South African legal requirements place emphasis on environmental impact assessments (EIAs) and relegate the role of social impact assessments (SIAs) to a secondary position.

Notwithstanding this, during a recent social impact assessment, undertaken as part of a broader environmental impact assessment, the assessors were clearly left with the impression that, as the project unfolded, the significance of the SIA

to the success of the project increased. In this regard, both the more biophysically orientated members of the multidisciplinary EIA team, as well as the project engineers, began to take note of socially related issues and to increasingly rely on the SIA process to inform, not only the EIA process, but also the project planning process at a stage when changes could more easily be made.

In this paper the experiences of the SIA practitioners, which led to this impression, will be discussed. These experiences will be related against the context of attempting to apply SIA theory and methodology, as part of a multidisciplinary team, to a practical and dynamic situation. Towards this end a brief description of the project will be given, followed by an outline of the theory and methodology applied, and a discussion concerning the experiences gained while attempting to apply this theory and methodology. In concluding, further consideration will be given to the emerging relationship between the biophysical and social scientists within the context of environmental and social impact assessments in the light of these experiences.

Project background

For some decades, the traffic volume between Johannesburg and Pretoria has been growing at a rate of approximately 7% per annum and has now reached a critical stage. This has resulted in an urgent need to provide commuters with an alternate means of transport between the two cities and to persuade private motorists to make use of this alternative. With this in mind a political decision was taken in 2000 to investigate the feasibility of a rapid rail system linking Pretoria, Johannesburg and Johannesburg International Airport. After establishing the feasibility of the proposed project, in consultation with Leeds University, it was decided to pursue the matter further.

In January 2002, the Transport Department of the local Government commissioned an Environmental Impact Assessment (EIA) as is required by South African legislation. In April 2002 a number of specialists were sub-contracted by the Environment Impact Assessors to undertake various studies that were to form part of the final report. Amongst these specialist studies was a Social Impact Assessment (SIA), which is the focus of this paper and which

will now be considered against the background of the orientations described by Taylor, Bryan and Goodrich (1990).

Applying theory to practice – The social impact assessment process

Taylor *et al* (1990, pages 32-33), point out that there are four orientations in respect of the practice of social assessment and that these orientations can be described as, technocratic-action, technocratic-research, participatory-action and participatory-research. Each of these orientations will be briefly explained below.

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In respect of these orientations the Gautrain Rapid Rail Project, from now on referred to as the Gautrain or GRRP, clearly fell into the first of these orientations, namely the technocratic-action dimension. The technocratic-action dimension, according to Taylor *et al* (1990, page 33), is typical of research that takes place on a 'top-down' decision-making basis informed by 'expert knowledge' and aimed at " ...fulfilling legal requirements associated with the field of environmental impact assessment and natural resource planning and management." Not only did this research fit this description well, it also fits the description, given by Taylor *et al*, of work undertaken by private sector developers and consulting firms whose aim it is to meet the needs of their clients.

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In this sense then the Gautrain SIA formed part of the EIA, which, in South Africa, is a legal requirement for projects of this nature. Furthermore, the EIA research contract was awarded to a private environmental consulting firm whose legal and moral obligation was to ensure impartiality, yet who were forced by circumstances to remain closely aligned to the developers. These circumstances included the fact that the developers controlled the funds allocated to the project and that they required the assessment to be undertaken within a specific and limited time frame. As South Africa is a developing country it is quite likely that both the developers and the EIA consultancy firm are likely to encounter each other during future contracts and that, consequently, the consultancy firm would be unlikely to act in a manner that would lead to its alienation from the developers. This set of circumstances highlights the problem of values and morality that often occurs in assessment work (see for

instance amongst others, Clinton, 1978; Taylor *et al*, 1990, page 31; and Becker, 1997, pages 167-171).

However, as the project continued to unfold, certain developments occurred that would also align the project with what Taylor *et al* (1990, page 34) describe as participatory-action. Participatory-action is depicted as “a ‘bottom-up’ attempt to organise for social change ... in response to policies originating primarily from above.”

Relatively early in the project, and largely through the public participation process, local communities began to mobilise and responded to the developer’s proposals in what was a ‘bottom-up’ attempt to influence the project planners. In one particular instance the first attempt to have the base route alignment readjusted was met with a counter response from another community as groups, formed for the sole purpose of challenging the project, began to challenge each other as well. These communities were the Muckleneuk-Lukasrand grouping and the Alliance Against the Park Street Alignment (AAPSA). Both of these groups were situated in the academic precincts east of the City of Pretoria and both opposed the line east of the city, in a not-in-my-backyard **NIMBY** fashion that led to conflict as the following extract from one of the submissions reveals.

“It is very unfortunate that the newly established local-level democratic principle of community participation led to conflict between two separate affected communities (Muckleneuk-Lukasrand and AAPSA). It is deeply regretted that we were not consulted by our counterparts right from the start when they initiated their Park Street submission” (Bohlweki Environmental, 2002, page 40).

What became quite clear during this process was that the issue of empowerment was an important factor as communities who had the intellectual, financial and political resources, and who were prepared to vociferously oppose the project, exhibited the greatest influence on the project planners. This level of sophistication amongst certain of the communities resulted in the project being moved on to what Taylor *et al* (1990) describe as participatory-research. That is research done “ ...in collaboration with an interest group” (Taylor *et al*,

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1990, page 34). It was clear that this occurred as the two communities who mobilised, and eventually confronted each other, both had strong technical, professional and academic backgrounds. Both also formed separate research teams who undertook extensive research projects that resulted in two major submissions, which are extensively cited in the SIA report.

Although there may at times have been emotionally driven conflict between the two groups, and the research teams that were formed by each group, this did not necessarily detract from the quality of the research undertaken and reports submitted. For the most part, members of each team remained conscious of their professional and academic credibility and functioned at a high professional and intellectual level. This is clearly evident in the following argument advanced by one of the groups concerning the possible relocation of elderly citizens and the impact that this could have on these people.

“Most of those who will be directly affected are in the older age groups. Almost three quarters (73%) are 46 years and older. Research on the impact of population relocation has shown that the experience of relocation varies, depending on the age, gender and income of those who are relocated (De Wet 1995:4-5). In general, older people experience much more stress during the process of relocation, because they are more risk averse. According to Colson (quoted in De Wet 1995:5), older people do not adapt easily to the experience of relocation, and some time after the process ‘were still mourning all they had lost’. In the case of Muckleneuk residents who are owners, and who will be expropriated, their middle class status will insulate them somewhat from the negative impact of relocation (more affluent people having a greater range of coping responses, according to De Wet [1995:4]), but this is unlikely to offset the increased stress they experience during the process as a result of age” (Bohlweki Environmental, 2002, page 39).

Although Taylor *et al*’s (1990) research dimension, technocratic-research, will not be dealt with to any great extent here, it does warrant at least some mention. In respect of technocratic-research, simply put, research for research’s sake and policy evaluative research, the research project also fitted with Taylor *et al*’s description. Firstly, a major aim of the research was to evaluate intended policy. Secondly, considering the size and nature of the

project within the South African context, there is no doubt that it will serve as a basis, whether positive or negative, against which to evaluate future SIAs within South African academic institutions.

Considering these developments it could be argued that the parameters of the project became flexible enough to allow for a transcending of the orientations, and that each orientation informed the other adding to the richness of the report. It could also be argued that in fact, this process is continuing after the submission of the final report as at least the two communities referred to above continue to engage with the environmental impact consultants and the project developers at the point of writing.

Taylor *et al* (1990, pages 37-39) suggests that this type of transition of orientations is productive to the practice of social impact assessments and that practitioners should consider all orientations in an attempt to move towards the middle ground. Whether middle ground was in fact achieved in respect of the Gautrain SIA is debatable. What, however, was apparent was that all of these orientations were evident; that they at times merged; and that each informed the final SIA report. The next question for consideration is the process that the social impact assessment followed in comparison to those suggested in the literature.

Following a social assessment process

A number of guidelines have been developed that list certain steps that need to be followed and variables that need to be considered during the SIA process (Interorganizational Committee on Guidelines and Principles for Social Impact Assessors, 1994; Becker, 1997; Burdge, 2003). The social impact process undertaken in respect of the Gautrain project will now be related against the background of these steps and more specifically, these guidelines.

Although the Interorganizational Committee on Guidelines and Principles for Social Impact Assessors (1994), from now on referred to as the Interorganizational Committee or IC, provide a model for social impact assessment, the SIA for the Gautrain project remained at the first of these stages, namely the planning/policy development stage. The other three stages

refer to construction/implementation, operation/maintenance and decommissioning/abandonment.

Vis-à-vis the steps in the social impact process the Gautrain SIA closely followed each step outlined in the Guidelines and Principles for Social Impact Assessors (1994) and accordingly, commenced with public involvement moving on to describe proposed actions and alternatives, identify and consider the baseline conditions, identify probable impacts, investigate these impacts and recommend alternatives in a report that included a mitigation plan.

Although each of these steps was ultimately followed, the Gautrain social impact assessment commenced at a stage well after the initial project planning process had begun. This resulted in the assessors having to initially accept that certain decisions had already been taken and that they would need to operate within the constraints of the given parameters. Not the least of these parameters was the allocation of funds between the various specialist areas that formed part of the EIA. During this preliminary phase of the project it was made clear that, although there was an extensive overall budget attached to the project, expectations were that this budget would largely be consumed in respect of the biophysical and more technical issues, and that the budget was limited in respect of the social issues. It was also indicated that a further constraint was that of the time limitations attached to the project as the SIA assessors were approached to submit a budget in April 2002 and the report was to be finalised and submitted for evaluation by the end of August 2002.

Consequently, the EIA consultants, prior to contracting the SIA consultants, had undertaken an initial scoping exercise. On commencement, the SIA consultants were presented with a preferred route alignment and a mandate to conduct research amongst the various communities within approximately 500 meters either side of the preferred route alignment as well as within the vicinity of the proposed station sites. At this stage it was clear that the SIA was not given great significance by either the project developers or the EIA consultants. Nonetheless, based on this mandate the social impact assessors decided to commence and identified various social impact assessment variables, as outlined in the IC guideline document (1994, pages 8-9), such as population

characteristics, community and institutional structures, political and social resources, individual and family changes and community resources.

To these were added a further two dimensions in the form of community networks (sense of place and sense of community) and attitudes towards the project (general & personal impacts, existing transport infrastructure; trust in developers; transparency of process; impact of noise and overall support for the project). Founded on these variables a self-administered questionnaire was developed and subsequently distributed amongst, and collected from, the affected communities.

From the outset, numerous decisions needed to be taken in the field by the assessors. The first of these decisions was to drastically expand the scope of the first self-administered survey to include an entire suburb rather than restrict the investigation to a 1000-meter wide area along the preferred route alignment. This decision was made, as maps demarcating the precise route were not available at the time of commencement. Without these maps the precise route alignment was not certain enough and it was possible that not all affected parties would be covered. In hindsight this decision proved valuable to the whole EIA process as eventually thirteen alternative route alignments emerged in the area, which led to the NIMBY confrontations referred to above and various legal challenges faced by the developers.

Just prior to the first self-administered questionnaire being distributed, the project had been communicated to the public and, at about the time of the first survey a process of public participation commenced. This announcement and public participation process led to various letters, submissions and a series of follow-up meetings, all of which was collected as data, analysed and used in the final report. It was during this process that the value of the SIA process began to emerge as both the EIA consultants and the project developers turned to the SIA process to help inform the planning process. As a result a number of alternate route alignments were proposed and accepted as viable alternatives by the project developers.

In one instance the site of the station was moved to what turned out to be a better location for both community and project developers, resulting in a win-win

situation. The community motivated this move when they argued, “*Zinnia Drive in Marlboro Gardens is a typical example of where the rich and poor in the community are separated by the road. The station will cause disruption to the movement of children to school, worshippers to the Mosque and people using community facilities in the area*” (Bohlweki Environmental, 2002, page 48). The project developers responded immediately to this submission during the planning phase of the project and relocated the station site, which in the end suited both the residents of the area and the project engineers better.

As the public engaged with the EIA consultants and developers, alternatives in respect of route alignments and station locations began to emerge through the public participation process. At this point the value of the role of the SIA consultants began to be recognised and the SIA process was allocated a larger percentage of the budget and greater latitude than was originally provided for.

For instance, as the self-administered survey was being distributed in the eastern suburbs of Pretoria, and people began to respond, so the survey parameters were increased, literally while the assessors were in the field. Eventually, this resulted in the survey area growing to nearly five times its original size. Money was also released to allow the SIA consultants to undertake a physical inspection of each area to be surveyed prior to undertaking the self-administered questionnaire survey. This resulted in a more informed survey process, which was more accurate and much swifter. A greater degree of interaction also began to develop between the SIA consultants and the other biophysically orientated members of the EIA team.

These experiences reflect Becker’s (1997, pages 215-218), view on the change in focus on cyclical processes in the natural sciences. Although the emphasis in the natural sciences has traditionally been on cyclical processes, they have recently turned their attention towards noncyclical processes. This, he suggests, has resulted in a distinction being made between open and closed systems and a growing awareness amongst natural scientists of the problems associated with system noise. Consequently, a greater interaction and interdependence between the natural and social scientists is likely to result in a greater understanding of the challenges each discipline faces and the contributions each can make within the field of impact assessments. As Becker

(1997, page 216) continues to argue, “as soon as pioneers in a sector are successful in using SIA, other actors will follow.”

Clearly, experiences from the Gautrain project indicate that this was indeed the case. As the SIA began to generate reaction from interested and affected parties (I & A Ps) and these I & A Ps began to engage with the environmental assessors and project developers so system noise was increased. However, through the SIA process, in particular the public participation process, significant changes to the planning stages of the project began to emerge often creating win-win scenarios as described above. This in turn raised the credibility of the SIA process amongst both the biophysically orientated members of the EIA team as well as amongst the project developers. A development that was clearly demonstrated by the release of funds, increased latitude given to the SIA consultants and the increased interaction between the biophysically orientated scientists and project engineers on the one hand and the social scientists on the other, as already referred to above. At one stage the SIA consultants were approached to help create a scenario of responses that could be expected from the public at the follow-up meetings, so that the other EIA team members and the project engineers would have the information on hand and would be prepared to deal with questions from the public.

This cross-pollination between the various disciplines was not a one-way process and had its problems. For instance at the stage when the project impacts were identified and estimated the entire EIA team was required to ascertain the nature, extent, duration, probability, significance and status of identified impacts that could result from the pre-construction, construction and operational phase of the project. This required a degree of lateral thinking from the social scientists on the team as they attempted to quantify values and perceptions, aligning them with those evaluations of the biophysically orientated scientists and fitting them into a specific evaluation grid.

It is this type of process that has resulted in the methodologies and report writing formats of social impact assessors being largely influenced by the requirements and methodologies of project developers as well as the biophysical sciences. Consequently, SIA practitioners are often accused of applying a positivist methodology, with an emphasis on quantification and

reductionism, in an attempt to generate a report that complies with the requirements of the biophysical sciences, and which appeals to an audience who may comprise, amongst others of accountants, engineers and politicians (Barrow, 2002; Burdge and Vanclay, 1995; Burningham, 1995). In this sense SIA practitioners have been accused of obscuring “the analyst’s biases behind a single figure” (Egna, 1995, page 131).

In an attempt to alleviate this problem the social impact assessors applied a multifaceted approach and used triangulation (Brewer and Hunter, 1989; Patton, 1990, pages 10-12; Burgess, 1994 page ix; Nau, 1995 and Flick, 1998) as a technique when collecting data. In this manner, they attempted to transcend the technocratic-participatory divide in social assessments identified by Taylor *et al* (1990, pages 32-39) by involving certain community representatives in the execution of the research, thus aligning the project with Taylor *et al*’s description of participatory-action.

This resulted in the collection, processing and analysing of a large amount of qualitative data that was used on which to base the evaluations. Nevertheless, the difficulty in dealing with perceptions and values, and the dangers of attempting to apply quantitative techniques to these perceptions and values, cannot be over emphasised. It is these types of problems that social impact assessors need to face and solve in order to advance the discipline. In so doing cognisance must also be taken of those who read and act on social impact assessments and their need for precise and comprehensive evaluation techniques.

In this vein social scientists have a lot to learn from the biophysically orientated scientists. This, however, does not mean that they need slavishly follow the quantitative requirements of the harder sciences but should interact to develop means of adding depth and richness to the assessment process so all can better understand the impacts of our developments.

Concluding remarks

It is way beyond the confines of this paper to deal with all the relevant aspects that a project of the nature and magnitude of the Gautrain Rapid Rail Link may

highlight. However, an attempt was made to introduce some of these issues and by so doing open them for further debate.

The first of these issues that needs attention concerns the question of funding. In South Africa project developers are responsible for appointing and paying the EIA consultants. This situation is likely to result in too close a relationship between developer and assessor and is certainly not conducive to impartial assessments. Even where assessments may largely be impartial their legitimacy may often be questioned due to the tenuous relationship these requirements create. In the case of the Gautrain SIA, this situation was somewhat less problematic in that the social impact assessors, having been sub-contracted by the EIA consultants, were further removed from the project developers.

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In situations where impartiality is in fact questioned the social scientist has three options, to resign, to appeal to the authorities or to become involved. Cock however, proposes that, for various reasons, the best option is for the social scientist to remain involved, but in the tradition of C. Wright Mills as suggested by Freudenburg and Keating (in Cock, 1994). In this manner the social scientist can “...help ensure that other publics – those groups with competing interests – be assisted in gaining power so that they can exert influence on the agencies involved” (Cock, 1994, page 27). This is especially relevant in the developing world where the majority of the populations lack education and financial resources and consequently are disempowered.

The second issue concerns that of the relationship between social scientists and biophysical scientists. As the level of sophistication of the various disciplines drawn into the assessment process increases, along with the increasing complexity of developments and activism of the public, so neither group of scientists can afford to ignore the other. In fact each has something unique to contribute to the evaluation process making a compelling case for a inter- as opposed to an multi-disciplinary approach to impact assessments. A distinction is made between a multi- and inter-disciplinary approach in the sense that the former requires of specialists to work alongside each other while the latter refers to a more intense relationship where specialists function together as a team. Becker (1997, page 215-218) has already pointed in this direction and

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it is our sense that, at least in the case of the Gautrain project, the latter type of relationship truly developed towards the end of the project adding richness and depth to the final report.

Finally, the issue of evaluation criteria and assessment methodologies is crucial, particularly those that can be applied amongst illiterate and semi-literate populations within the context of the developing world. It is possible that if impact assessors begin to function on more of a multi-disciplinary basis, and in so doing stretch each other to find solutions, that appropriate methodologies and evaluation criteria will emerge.

At the point of completing this paper, it was announced in the press (Sunday Times Metro, 5 October 2003, page 5) that the authorising body, the Gauteng Department of Agriculture, Conservation, Environment and Land Affairs, had given the project a positive Record of Decision (RoD) based on the EIA report and that residents had 30 days to appeal the decision. It had taken 127 public meetings to achieve this, which had resulted in the number of houses under threat being reduced from 800 to 320. It was, however, also announced that at least the Muckleneuk community intended to oppose the decision. It is unlikely that any other community will do so as, at the time the report was submitted, agreement had been obtained for 80% of the proposed route. In conclusion, it could be said that although our initial involvement with the Gautrain project proved to be difficult and challenging at times, it also proved to be both flexible and enlightening, providing hope for a more meaningful role for social impact assessments in the future.

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