

SPATIAL DENSITY: THE PERVASIVE NATURE OF RACIAL
SEGREGATION IN
THE NEW DEMOCRATIC SOUTH AFRICA

‘A descriptive study of how a sample of students at the University
of KwaZulu-Natal (Pietermaritzburg) use social space’.

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A dissertation submitted in partial fulfillment of the requirements for
the degree of Master of Arts (Counselling Psychology) in the
Department of Psychology, University of KwaZulu-Natal
(Pietermaritzburg).

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14 October 2004

ABSTRACT

The present study investigated the nature of desegregation as observed by the use of space by the diverse racial groups at the University of KwaZulu-Natal (Pietermaritzburg).

The researcher observed and recorded participants as they used the Hexagon Cafeteria at the University. Observations and systematic recordings were conducted in the first week in term on Monday and Tuesday over four consecutive weeks. Participants were recorded as they sat at a table and when they left the table. Their race, gender, time and table number were captured, forming data for the final analysis.

The study revealed that black students were the least represented race group, in number, and were the mostly segregated from the other racial groups. Perhaps this study would have yielded different results if there were a higher proportion of black students throughout the six-day observational period. Indian students were the majority at the Cafeteria in comparison to other racial groups. It seems that the Hexagon Cafeteria is a popular meeting place for most Indian students. It can also be speculated that the Hexagon Cafeteria appears to be an ideal meeting place for most female students as they outnumbered the male students throughout the six-day observational period. Despite persistent racial segregation, points of contact (integration) were observed between the three racial groups.

ACKNOWLEDGEMENTS

I wish to thank God for strength and guidance over the course of this research.

My deepest love and appreciation goes to my family for their continued love and support throughout the writing of this dissertation. I cannot adequately express my gratitude of the sacrifices made and the encouragement shown during the period of research. Thanks mum and 'bru'.

Thanks go to Bruce and Kevin for their guidance, time and support for this project. I would have never completed the statistical analysis without the assistance and guidance of Dr Bruce Faulds. "You sure are a genius!"

The following people have assisted me in the compilation of my dissertation: especially Michelle (you're a star), Meryl and Ulrike and Ruth for reading my rough drafts.

And last but not least I would like to thank the library staff for all their friendly and efficient help over the years, my special thanks go to Jillian, Renee, Celeste, Sash and Jays.

Romans 14: 13

"Therefore let us stop passing judgment on one another.

instead, make up your mind

not to put any stumbling-block

or obstacles in your brother's way".

DECLARATION

This is to declare that this
dissertation represents my own
work both in conception and in
execution.

Rossano Strike Wells

Date

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CHAPTER ONE

1. INTRODUCTION

1.1 Motivation for the study

The history of segregation dates back to the late 19th century. This however is not supposed to mean that segregation was not in existence before then, as America and South Africa had discriminated against people of colour from as far back as the 17th century when both countries became colonialised. According to Cell, (1982), the term 'segregation' in its modern sense was adopted by the English language in the 1900s as race relations in both societies entered a new and important phase.

Segregation is defined as 'an interlocking system of economic institutions, social practices and customs, political power, law and ideology, all of which function both as a means and an end in one group's efforts to keep another (or others) in their 'place' within a society that is actually becoming unified' (Cell, 1982, p.14). These practices were enforced in South Africa during the apartheid era. The ruling party during this period was the Nationalist Party and they were responsible for enforcing laws that kept black and white people separate.

The following narrative sheds light on the nature of the racial attitude that was adopted during the apartheid era in South Africa.

"See that man over there?"

Yes.

Well, I hate him.

But you do not know him.

That's why I hate him" (Allport, 1954 cited in Stephan & Stephan, p.253).

Segregation was experienced in both South Africa and America, however the American (what is known as the 'southern') mode of segregation differed to the South African mode of segregation in terms of its function and operation (Fredrickson, 1981). Segregation in America was directed at a minority, meaning that legalised discrimination in America was not really a requirement for the maintenance of white pre-eminence. Afro-Americans had a lot more in common with their oppressors in terms of language, religion, social values and lifestyle than did their South African counterparts. Thus, Fredrickson (1981) claims that the Jim Crow (as the discriminatory laws and practices in America are known) was never intended to preserve and stress cultural differences between the race groups but rather as a basis for an overt form of racial discrimination.

In South Africa the Native Land Act of 1913 facilitated and ensured the territorial division of the country, keeping black people separate from whites by prohibiting the purchasing of land by Africans outside their designated reserves. This connotes that the reserves were the only places where Africans could reside except when the interests and convenience of whites required them to be elsewhere (Fredrickson, 1981). Unlike our American counterparts, South Africa ensured restrictive contact between the different

racial groups by enforcing legalized segregation. Laws such as the Natives (Urban Areas) Act of 1923, the University Act of South Africa (1916) and its subsequent amendments and the Group Areas Act ensured this racial phenomenon.

In 1960 only 33 percent of people classified as African resided in urban areas and by 1980 that proportion still had not changed. The 'most spectacular disintegration of the Group Areas Act occurred in Johannesburg where by the end of the 1980s most of the city's inner-city neighbourhoods, had more black people than the white residents', (Morris, 1999, p.670). The Group Areas Act, which had been the government's cornerstone of apartheid, was officially scrapped in February 1991 together with other cornerstones of apartheid such as the Land Acts and the Population Registration Acts (Morris, 1999).

When South Africa attained the label of being a democracy, it was expected by many that intergroup relations would also change. This carried with it an inherent anticipation that restrictive racial laws would engender improved contact between the different racial groups. Despite the many social and political changes that have occurred in South Africa over the past decade, racism and the accompanying social divisions along racial lines continue to be central features of the South African human landscape (Moller & Schlemmer, 1989).

Even though racial segregation at tertiary institutions ended in 1985 (Christopher, 1994) a four year follow up study conducted among scholars and University students in South

Africa showed that the non acceptance of other racial groups still seems to persist (Smith, Stones & Naidoo, 2003). The researchers of this study indicate that even though there is a small evidence of change in tolerance towards other race groups, there still needs to be more social changes if a truly “rainbow nation” in South Africa is to be realized. The researchers are hopeful that further social and political changes will continue to increase tolerance among groups (Smith, Stones & Naidoo, 2003). This longitudinal study investigating racial attitudes among South African young adults by Smith, Stones and Naidoo (2003) was first conducted in 1995 among adolescent high school students in Eastern Cape and a follow up study was conducted in 1999 among students at Rhodes and Western Cape University. Since then there have not been any studies investigating racial segregation among students at tertiary institutions in South Africa. Hence this study fills in the gap on previous research by investigating the nature of desegregation as observed in the use of space by the diverse racial groups in South Africa at the University of KwaZulu-Natal (Pietermaritzburg). To date numerous political and social changes have taken place in South Africa. It would thus be very interesting to know if such changes have brought about changes in racial attitudes towards other race groups in tertiary institutions in KwaZulu-Natal.

1.2 Statement of the problem

The studies mentioned thus far do not explore the use of space by students in a South African University. South African universities are constantly confronted with racially related difficulties despite legislative changes even in academia. The present study attempts to describe the observed use of space by students from different racial groups.

The decision to share space (contact) with someone from a different racial group or not to is informed by one's attitude towards the other. It is the focus of this study to explore and describe this phenomenon as observed in the cafeteria of the University of KwaZulu-Natal, Pietermaritzburg.

1.3 Aim of the study

The aim of this study is to achieve the following:

To describe how the observed sample of students utilize social space in the Hexagon cafeteria as an indication of racial segregation.

CHAPTER TWO

REVIEW OF LITERATURE: CONTACT HYPOTHESIS AND RACISM IN SOUTH AFRICA

2.1 The Contact Hypothesis

The classical contact hypothesis regards contact as a means by which people of different groupings can discover that they share the same basic values and attitudes. Thus, an expectation of the development of positive attitudes and the resultant reduction of intergroup conflict is assumed. According to Allport's contact theory (as cited in Pettigrew, 1998), certain social conditions are pertinent for optimal intergroup contact: these include equal group status within the situation, common goals, intergroup cooperation and authority support. If all these conditions were satisfied then presumably, prejudice, bias, in-group and out-group categorization would be diminished.

According to Mynhardt and Du Toit, (1991) the creation of 'ideal' contact situations is essential for optimum attitude change. The following are the proposed conditions:

- Equal status, the concept stresses that this exists at least within the situation itself. According to Allport, at least contact between the two groups should be perceived as equal in the situation.
- Common goals, this entails groups working together towards the reduction of prejudice in a given contact situation.

- Intergroup cooperation, this condition espouses the seeking of opportunities for meaningful contact to be created.
- Support of authorities, law or custom assumes the sanction of positive effects of intergroup contact.
- Sufficient opportunity for friendship formation.
- Prevailing norms being favourable to all groups.
- Proximity and intimate contact.
- Contact situation should preferably not be contentious.

Equal status, the first condition for optimal intergroup contact, is believed to be conducive to successful change (Brewer & Miller, 1984; Brown, 1995; Tajfel, 1981). According to Pettigrew (1998), such contact is supposed to induce positive interaction, resulting in diminished conflict and hostility. This author also makes a distinction between equal status within the contact situation and status outside the contact situation. Based on the above research findings it can be argued that conflict between ingroup contacts in South Africa is due to the social structures impairing equal intergroup status in contact situations.

In the study by Bornman and Mynhardt (1991), statistically significant positive effects of contact were found for whites, while this was not true for blacks and other groups. The above argument seems to support the theory that the quality of interracial contact or the context of the situation influences perceptions of people within the situation, irrespective of the conditions. Other studies (Mynhardt & Du Toit, 1991; Morris, 1999; Dixon &

Durrheim, 2003) conducted in South Africa have highlighted the extent of group or identity in contact situations. It appears that equal status can never really be reached unless it is reflected in the social structure (Foster & Finchilescu, 1986). These contact hypothesis studies used trainee nurses as a study sample. Programmes in these hospitals provided the opportunity for equal status 'within the situation' allowing also for co-operation and friendly contact. The support for integrated training was notably greater in the contact situation (Mynhardt & Du Toit, 1991).

Common goals in intergroup contact that are conducive to the reduction of segregation are important in ensuring successful desegregation. This was found to be true in a field study, the Robbers' Cave, in which cooperation was a pertinent ingredient for success (Sheriff, cited in Pettigrew, 1998). A common goal to achieve set criteria would require an intergroup dependency in order to achieve this goal. Factors that are effective in achieving common goals are proximity, frequency of contact and the context of the social climate. These factors are not mutually exclusive but can also influence friendship formation. It is suggested that physical proximity and a higher frequency of contact facilitates consensus on common goals and shared coping (Mynhardt & Du Toit, 1991). It also appears that close proximity, the search for common goals and a higher frequency of contact are most likely to reduce stereotypes and negative perceptions between groups (Mynhardt & Du Toit, 1991).

Rumour also plays an important role in changing people's attitudes. Thus, if rumours about another group are positive, people will tend to change their perceptions with regard

to out-group members. This assertion is more pronounced in the establishment of initial contact (Brewer & Miller, 1984). Harvey (2001) revealed that the dissemination of distorted information, especially political propaganda, results in negative outcomes. As people are social beings, their behaviour is mostly regulated by information gathered through the ages. The South African population has not been exempt from such influences.

Research has also shown that people who have had previous contact with other groups are less likely to be influenced by later contact situations (Amir, 1969). Thus, an exposure to a negative situation between groups is likely to induce negative expectations in other contact situations. It appears that people prefer to be in initial contact with people from other groups with similar status for such contact to have an effect on later intergroup contact. This is crucial when considering intergroup contacts in the university setting. University demographics exhibit a multinational as well as multicultural phenomenon, a scene for observing intergroup contact.

Support by authorities, law or custom is perceived to encourage intergroup contact resulting in more positive effects (Brown, 1995). It is evidenced in some studies that this fourth condition does not hold true for all intergroup contact situations (Maoz, 2002). In this regard Pettigrew (1998) cites empirical evidence in the United States of America, where racial segregation was pervasive despite repealed legislation to the contrary. It is suggested based on the above study that Allport (1979) may have not sanctioned the mere mixing of people from different racial groups as a means to alleviate prejudice.

Schofield espoused Allport's idea (1995, p.260), by questioning whether there is meaningful contact in a racially mixed setting. In South Africa, studies by Dixon and Durrheim (2003) and Morris (1999) highlight social situations that describe racial mixing with no contact at all. In the study by Morris (1999) it was found that white flat caretakers engaged in racially biased actions, as a way of keeping out others (Coloureds, Indians and Africans) from renting empty flats in previously white only residential areas.

2.1.1 Review of empirical literature

Notwithstanding criticism of the contact hypothesis, undoubtedly extensive research has been conducted in cross-cultural situations, and there seems to be more support for Allport's (1979) assertions (Amir, 1969; Brown, 1995; Pettigrew, 1998).

A number of classic contact hypothesis studies have been conducted in different settings. One of the studies cited in Pettigrew (1998) investigated optimal conditions for intergroup contact. According to the author, interdependency developed within the Merchant Marines in 1948, after desegregation. This encouraged positive racial conditions between white and black seamen. Also cited in the literature, is the development of positive perceptions between black and white housewives living in desegregated housing projects in New York (Deutsch & Collins, 1951). The change in perceptions between groups led to a change in attitudes.

The study by Morris (1999) of race relations in Hillbrow, Johannesburg revealed that racial attitudes between groups improved when there was a higher frequency of contact.

In this study, a post-apartheid study, Morris found that people's perceptions and attitudes changed as a consequence of interracial contact. Also evidenced in this study was mutual assistance across the different racial groups. It was found that people from different groups mixed quite well in bars and hotels and that many of the hotel guests were mixed couples. So it would appear that 'favourable conditions' appear to reduce segregation while 'unfavourable conditions' would increase intergroup racial categorization and desegregation (Amir, 1969). The presupposition that prejudice and intergroup conflict occur as a result of adverse social conditions is intrinsic to the contact hypothesis.

Equal status was suggested by most interracial contact in apartment blocks in Johannesburg. This statement seems to support the contact hypothesis. In the same study, it was found that for residents whose socio-economic status was equal, there was a greater possibility of intergroup contact being friendly. According to Ford (1973), equal status contact reduces stereotyped images and physical proximity, 'facilitates intergroup neighbouring among families having homogenous socio-economic characteristics'.

Smith and Boero (2001) found that out of 33 articles, thirty three percent (33%) contained data supporting the assertion that intergroup contact has a beneficial effect upon racial attitudes. Other researchers, (Finchilescu, 1994; Bornman & Mynhardt, 1991), found statistically significant positive effects of intergroup contact, especially for (the psychologically dominant group) white populations. In essence these studies seem to suggest that the quality of contact is crucial for change in people's attitudes.

The study by Wagner, Hewstone and Machleit (1989, cited in Stones, 1994) found that leisure time contact was a better predictor of positive racial attitudes for whites; however, contact variables were not related to the racial attitudes of Turks. This study was conducted in a varied school setting. Yet, other studies, Jackman and Crane (1986) found that multiple contacts were more associated with racial acceptance than degree of intimacy. This study was rated excellent and the results indicated that contact with higher status blacks was most beneficial in reducing whites' biases.

2.1.2 Critique of the Contact Hypothesis

This section will consider some of the concerns regarding the contact hypothesis. The problem of generalisability questions if and how the outcome of contact in one situation will apply to other situations, out-group or uninvolved groups (Pettigrew, 1998). Accepting that the contact hypothesis works in optimal situations, how does this apply to other situations? This generalization is vital in order to ensure intergroup contact to have broad and lasting change (Pettigrew, 1998). According to Pettigrew (1998) for intergroup contact to be effective social sanctions must be in place for such contact to be more acceptable. When disconfirming evidence occurs it is concluded that pertinent criteria have not been adequately met to ensure positive effects (Brown, 1995).

There has been segregation in education, housing, recreation, workplace and other diverse sectors of the social sphere. The Contact Hypothesis has been used in many contexts like schools and residential areas. However, it was found that when the Contact Hypothesis was applied to segregated schools for example, the interpersonal relations

among students in such schools did not improve (Garcia, Del Castillo & Umpierrez, 1997). The observed lack of contact led researchers to suggest that the Contact Hypothesis did not consider factors like personality factors, direction and intensity of initial attitude as important factors in encouraging successful intergroup contact (Amir 1969; Pettigrew 1998).

The findings of the study by Finchilescu (1994, cited in Mynhardt & Du Toit, 1991) indicate that frequent contact by different groups can create opportunities for the development of friendship. It is however, still difficult in the South African situation, to engender a condition for equal status within situations. Thus Pettigrew's (1998) assertions for 'within situation statuses' as being important for the reduction of prejudice, becomes problematic. It appears within the South African context that each racial group often perceives 'within situation statuses' differently.

Further critique of the contact hypothesis revolves around the process that is conducive to attitude and behaviour change. This critique focuses on the fact that contact hypothesis does not explain 'how' or 'why' change occurs. It is suggested by other researchers that intergroup attitudes depend on the social context, not contact opportunities (Christopher, 1994; Smith, Stones & Naidoo, 2003; Moller & Schlemmer, 1989).

Maoz (2002) refutes the 'within situation status' condition by stating that it is not enough. Personal factors such as attitudes and social attributions for perceiving differences of out-group members are important. Micro-level contacts according to Maoz (2002) cannot be

expected to improve relations between groups as such improvement often requires or is dependent on structural changes at the macro-societal level. Furthermore Maoz (2002) indicates that optimal contact settings are not enough as it was found that under these settings group members often intentionally avoided intergroup contact. Maoz suggests that even in desegregated and ethnically mixed settings, contact within the same ethnic group is more frequent than intergroup contact. It is believed that when interaction is replaced by interpersonally oriented relations; equal status or desegregation is possible (Brewer & Miller, 1984). However not all researchers find this assumption to be true for all contact situations (Tajfel, 1981; Amir, 1969; Mynhardt & Du Toit, 1991).

Brewer and Miller (1984) accept the suggested conditions by Allport for optimal intergroup contact, however they feel that other factors determine a change from stereotypical and segregative changes in intergroup contact. Furthermore these researchers indicate that equal status between members of different social groups at the structural level may not correspond to equal status at the psychological level. Thus, pre-existing status differentials between groups may carry over into new situations, making equal-status interaction difficult or impossible (Brewer & Miller, 1984).

Studies attest that, the intolerance of other groups is warranted through a psychological discourse of 'comfort' (Dixon & Durrheim, 2003). Some people believe that they would not be comfortable staying with people of other races. Whites stress that they do not like black people regardless of the similarities that may be there (Christopher, 1994; Morris, 1999). For example, whites indicated that they would not welcome contact with the

black group despite them having been in private schools and having a good command of the English language. This highlights the fact that the criterion of 'frequent contact' formulated by the contact hypothesis is not always permissible. Contact hypothesis projects that if there is frequent contact amongst different groups, there are possibilities that these groups will discover similarities amongst each other with an aim to improve contact.

It is within the contact domain that the focus of this study is based. The South African social sphere has experienced major changes, and the next section will attempt to traverse such racial changes by exploring their impact on intergroup contact. It will attempt to respond to the concern: Is there meaningful contact, if at all, between the different races? Prompted by Allport's (1954) contact hypothesis, this study intends to investigate and describe the nature of desegregation as observed at the University of KwaZulu-Natal, Pietermaritzburg campus. It will also be observed as to how the use of space or place by the different racial groups in South Africa illustrates attitudinal behaviour in terms of in-group and out-group. The context, in which this phenomenon is looked at, as social conduct, is an indication of interaction between an individual and the wider society. Based on the foregoing as well as research conducted in South Africa, this study will elucidate the pervasiveness of segregation in the post-apartheid (desegregated) South African society.

2.2 Segregation in South Africa: History

The purpose of this section is to contextualise the history of segregation as experienced in the South African domain. Naturally occurring intergroup contact in South Africa has been found wanting and this section will attempt to elucidate some of the contributing factors to this phenomenon. It is to describe how some of Allport's conditions for contact were met in a selective manner.

2.2.1 The historiography of segregation (apartheid)

It is important to begin this section of the discussion by referring to a definition of segregation. Cell (1982) defines segregation as "the separation of race, class, or ethnic group by enforced or voluntary residence in a restricted area, by barriers to social intercourse, by separate educational facilities, or by other discriminatory means" (p. 14). Cell, compared the American South and South African societies with regard to the origins and process of segregation. In many respects the historical process and the characteristics of intergroup relations in South Africa do not differ from elsewhere. However, there are elements that are unique to South African society, particularly the issue of racial domination of the majority by a minority (Foster & Louw-Potgieter, 1991). It is within this social contact domain that this study can be placed.

The concepts used in the definition of segregation: 'separation, enforced, restricted, barriers and discriminatory', denote conditions counter to Allport's assertions of integration, namely equal status and opportunities for contact. This definition delineates the segregation of intergroup relations in South Africa (Cell, 1982).

Beinart and Dubow (1995), posit that the rhetoric of South African 'apartheid' bore considerable similarities to white supremacist statements of the segregation era in America, but the central appeal of Afrikaner ethnic exclusivity was a distinctive aspect of apartheid. The context, in which apartheid was introduced, was also markedly different from the earlier segregationist period. It seems that in the era of European colonialism, segregation in South Africa did not appear exceptional. By contrast, at the time of decolonisation, apartheid began to stand out internationally as an immoral system in a way that its predecessor had not (Beinart & Dubow, 1995). In South Africa, this discrimination took place against people of colour, particularly against the black (African) population. The magnitude of apartheid's functions was the embodiment of a racist exploitation by the majority.

2.2.2 Education

The pivotal form of educational segregation in South Africa was the inferior Bantu education that purported to keep blacks mentally and economically dependent on their white counterparts. Other races, namely, coloureds (people of mixed race) and Indians were also subjected to different forms of inferior education. In essence, the three non-white racial groups received educational instruction that were profoundly set apart from the National or European model. Blacks were to remain in their reserves or locations just as coloured and Indians were expected to develop within their respective racial settings.

The education system protected whites by enforcing compulsory schooling in 1905. This was to guarantee the education of whites in preparing them to be masters of servants, while leaving others out of the newly established system to learn whatever they could in

inferior mission schools (Fredrickson, 1981). In addition, because Coloured education was not compulsory they received no formal education. This was another government strategy to ensure their inferior place in society. Cell (1982) states that the education of the African was designed to be practical to equip him for his rightful place as an efficient manual labourer. Blacks, Coloureds and Indians were not subject to compulsory education, which had a major impact on their development.

According to Christopher (1994), a Commission was appointed in 1949 by the then government, to look into the future of black education. As mentioned earlier, this resulted in what was the 'new' separate state education system for the black population. Under that government, blacks were restricted to certain positions in society and so the education they received was in line with their position decided by the then government. These missionaries devoted their lives to African education in mission schools, the medium of instruction being English. There were also Afrikaans medium schools as well as some German schools provided throughout the country. Christopher (1994) posits that by the late 1980's there were 17 departments of education in the country that ensured the education system was thoroughly segregated. According to the same author, this period culminated in the provision for Indian and Coloured education systems.

2.2.3 University Education

South African social life exhibited an extraordinary amount of segregation under the apartheid system (Christopher, 1994) and this was evident in tertiary education. The researcher regards the university context as an ideal research context in which non-

competitive intergroup contact can be observed. The target population is comprised of students, arguably an equal status population.

The same type of segregation persisted in universities throughout the country. According to Christopher (1994), the Extension of the University Education Act (1959) resulted in the establishment of a series of new ethnically based institutions for blacks, with separate universities for coloureds and Indians over and above the already established white universities. According to the same author in 1958, only seventeen percent (17%) of the students classified as Indian, black and coloured had been registered at universities classified as 'white'. These racial groups were only permitted to register at 'white' institutions if they wished to pursue a course not offered at their own ethnic university (Moodie, 1994; Christopher, 1994). It appears that only two percent (2%) of the 78 000 university students were registered at an institution other than that for their designated population group in 1974.

Wolpe (1995, cited in De la Rey, 2001, p.8) 'identified the university sector under apartheid as a dual system that combined a relatively advanced system for whites with an under-developed one for blacks, coloureds and Indians'. This demarcation enforced by the authorities promulgated the lack of contact between the different races. Thus, attitudes were born that seem to prevail and are pervasive within a democratic society. It is further acknowledged by the same author that two of the then White universities openly rejected the apartheid segregation of students according to race. These were the University of Cape Town and the University of the Witwatersrand, (De la Rey, 2001).

Notwithstanding the efforts of the two institutions, apartheid laws were implemented culminating in academic and racial segregation in institutions of higher education. As highlighted in (Christopher, 1994, De la Rey, 2001), the Extension of University Education Act of 1959 became a turning point in the establishment of racially demarcated tertiary institutions. This resulted in a clampdown on admission of students in white only universities and the fragmentation of the black race along ethnic lines.

Fort Hare was earmarked for Xhosa-speaking students; the University College of Zululand was intended for Zulu and Swazi students. The University College of the North for Sotho, Tsonga, Venda and Tswana students was also founded in 1959 (De la Rey, 2001, p.13). Likewise, in the Western Cape a University College was founded for coloureds and in Durban, a University College was established for Indian students, later known as the University of the Western Cape and University of Durban Westville, respectively. These institutional divisions were implemented to enforce racial segregation culminating in engendering different attitudes in the different races.

This racial segregation at tertiary institutions ended in 1985 when all universities were finally permitted to register all students irrespective of their racial group, (Christopher, 1994). University reform had the backing of the corporate world since universities produced the labour force upon which differences in both racial and class identities could be constructed. This reform was also seen as an opportunity for South Africa to improve its already tarnished international image (Davies, 1996).

2.3 Description of Segregation in South Africa

South African society has witnessed transitions from previous governments upholding racial separateness (apartheid) to the new and democratic government advancing integration and equality amongst the different racial groups. This is evident in the new constitution of the country geared towards a non-racial, non-sexist commitment. South Africa excluded black people from the vote and denied them basic civil rights. This section will attempt to describe the different eras pertaining to South African society. It is important to sketch South Africa's race discrimination history as a background to the current trends in race relations. It is envisaged that by engaging in this historiography, the pervasive nature of racial segregation would be contextualised.

Lipton (1987, p.35) explains apartheid as 'the hierarchical ordering of the whole social, economic and political structure of South African society on the basis of statutorily defined race'. Accordingly, there was a legalization and institutionalization of a system that discriminated against black people. This was in terms of social, political, economic and physical segregation. Restrictions against black people included lack of occupational mobility, separate residential areas, medical facilities, education, transport and recreational facilities (Lipton, 1987, p5).

In South Africa, the emergence of segregationism as a deliberate public policy coincided quite closely with the establishment of a self-governing union in 1910, (Fredrickson, 1981). The extent of discrimination in South Africa involved the partitioning of the country to ensure white control of the other races. Such was the effort to control that

apartheid laws enforced minimal social or personal contact between the different races. According to Christopher (1994, p.7), these efforts were to ensure control over use of space. The description of South Africa's apartheid era is important in the contextualisation of the present study. The use and organization of space today is a culmination of the apartheid efforts at enforcing racial segregation. Although apartheid targeted black people, this concept would include all people of colour, but this was particularly against the black population.

This was also true for the other races, namely coloureds and Indians. Whites enjoyed the advantage of recreational facilities in schools while the other racial groups did not. Transport was characterized by segregation, as non-whites could not board certain buses or particular coaches on trains. Recreation was also defined by use of space. Beaches were racially segregated further enforcing division even amongst the non-white groups.

The Group Areas Act of 1950 was instrumental in enforcing the government's policy of non-integration. Curfews were put to practice in order to clear the city centres, as well as white residential areas, of black people. In order to regulate the latter, times were stipulated for racial cleansing of demarcated whites-only areas. The Afrikaner Nationalist government also legalized Pass laws as a means to regulate the number of blacks entering the city. If a black person was not born in a particular area but wished to work there, it was illegal for that person to be employed in that town. If visiting relatives from out of town, a black person had to first acquire permission from the town council or superintendent to visit.

2.3.1 Race

The issue of race was not to remain an ideal, but was to become a practical policy of the state. The separation of the natives' families and tribes living on farms was to be achieved at any cost, 'a native who has reached a stipulated age will be allowed, with permission of his tribal chief and commissioner, to go temporarily to white areas to work on farms and in towns and cities. Nevertheless, he will not be allowed to take his family', (Harvey, 2001, p.49).

This methodology was adopted to control movement of the black people. Migrant labourers had to eventually return to their designated tribal (native) areas. As most blacks could not do so, they were housed in locations where they were not to enjoy any political rights or own property as they were viewed as temporary occupants. Thus, blacks could only remain in cities as long as they were employed. The unemployed had to be forced back to their native areas.

Consequently, by 1981, the Nationalist government had created four homelands for the black population. These were Transkei, Ciskei, Bophutatswana and Venda demarcated geographically to divide and rule the black population. Coloureds had also been uprooted from their homes, namely, District Six (6), Cape Town's inner city black neighbourhood, Sophiatown, Johannesburg. This was also the plight of the squatter camps, (informal settlements), at Crossroads in Cape Town.

It follows that these policies have determined people's relationships to this day. The leaders of the day were bent on ensuring segregation in the guise of separate self-development. Cities were to be cleansed of black people, 'to prevent the spread of disease' and to promote division, as blacks had to live in compounds or locations.

Other researchers, Bluen and Odesnik (1988) highlight factors such as poverty, lack of sufficient housing, problems with security forces and political harassment. The aforementioned factors induced resistance among the black population. Black people responded to increased oppression by forming various resistance movements. The government tried to curb black resistance by maintaining tight legal and political control. The African National Congress (ANC) established in 1912, the Pan-African Congress (PAC), Azanian People's Organisation (AZAPO), Inkatha yeNkululeko yeSizwe (IFP), United Democratic Front (UDF) were some of the resistance movements advocating for the black masses. These movements were instrumental in developing black consciousness and the resistance to the government's Pass laws. Race in South Africa, like in the United States of America, has been the medium for differentiation between social groups. It has also affected the manner in which people from different racial groups interact and use space. It is with this design that the following discussion concentrates on the effects of spatial determination within the South African population.

2.3.2 Spatial Identity

It follows from the above that the use of segregated space resulted in the formation of a spatial identity. Blacks were confined and expected to operate within specified spaces in

their daily lives. It is held consequently that each group developed separate spatial identities pertaining to their space, with accompanying legal and economic factors shaping such identities. As posited by other researchers, (Massey & Denton, 1993; Krysan & Farley, 2002), the pre-existence of segregated social relations and use of space translated to a comfortable, accustomed zone within which people operated. Perhaps such spatial identities determined the foreignness of the different racial groups to each other within the same country. Spatial identity is pertinent to the present study as it aims to explore the pervasiveness of segregation in post-apartheid, democratic South Africa.

2.3.3 Social Categorization

It is also reasoned that an individual's personal identity is highly differentiated and based in part on membership of significant social categories, along with the value and emotional significance attached to that membership. Consequently, the mere perception of belonging to a group distinct from another group is enough to produce intergroup discrimination in favour of the in-group (Tajfel, 1981). Tajfel (1981) asserts that the perception of social groups is characterized by comparative and emotional components. Accordingly, an individual will respond with respect to that aspect of his social identity, acting towards others in terms of their corresponding group membership rather than their personal identity. Further, the evaluative components of social categorization result in accentuated perception of intragroup similarities and perceived intergroup differences.

Categorical responding from others results in the depersonalization of members of the out-group. This means that in social situations out-group members are treated as

undifferentiated items in a unified social category (Breakwell, 1986). Thus, people are perceived in social situations independent of individual differences that may exist within a group or between members of two groups in other situations. This phenomenon appears to have been prevalent in a pre-democratic South Africa.

2.3.4 Social Identity

It appears that the process of social categorization or comparison operates to maintain and enhance group distinctiveness. Following this is the notion that categorical responding, accompanied by a need for positive self-identity causes group members to differentiate intragroup members from out-group members along dimensions that favour in-group members. Tajfel (1981) further proposes that group membership becomes part of the individual's self-concept. Thus, the need for social identity creates a kind of social competition in which individuals are motivated to define the situation in terms that are associated with positive in-group status. Brewer and Miller (1984) state that under these conditions, individuals avoid comparisons on characteristics that are unfavourable or irrelevant to in-group identity. Tajfel (1981) posits that social identity is one of the central psychological tenets underlying intergroup behaviour.

In the South African context, these identities tend to determine the manner in which people from different racial groups interact. These serve to separate racial groups as was accustomed to in the pre-democratic South Africa. Accordingly, Sibley (1995 as cited in Dixon, 2001) attests that dominant groups in their relations with others regulate the design and use of social space.

The gated communities that have evoked much debate along racial lines are analogous to the 'design' and use of social space. Students to further racial segregation as a determinant of spatial and social identity also used lecture theatres. What this implies is that within group dynamics, the separate identities of individuals, concerning space, operate to form one group identity. Students sit separately in own group clusters, which is an accustomed to, social identity within their daily situational experiences. The manifestation of social identity is reflected in the design of separate residential patterns, which must be seen as a broader spatial, ideological and political control of intergroup contact (Brewer & Miller, 1984).

South Africa, although it bears the label of being a democracy, the entrenched spatial boundaries of the past still seem to be quite active. Christopher (2001) describes post-apartheid South Africa as comprised of a society 'living together apart'. This notion appears to be supported by other studies conducted in South Africa (Dixon & Durrheim, 2003; Dixon, 2001). These studies provide insight into the daunting nature of trying to find agreement within intergroup dynamics. Thus, segregation in South Africa appears to still regulate how and where people have use space. This translates to an entrenched attitudinal perception of how people of different races have to interact in social spaces.

The study by Massey and Denton (1988) although not based in South Africa, bears a strong similarity to racial dimensions, the implications of which are applicable in this country. Separation seems to emerge even in areas as the school playground, where children play in racially biased groupings. In tertiary institutions, this dominates in

lecture theatres, the cafeteria and other recreational areas. Other studies conducted, for example (Schofield & Sagar, 1977; Dixon & Durrheim, 2003); highlight how separation seems to be played out in extra-mural activities such as sports. Following this study's major contribution to the explanation of racial disharmony, Dixon and Durrheim (2003) pursued and provided further insight into this phenomenon. It is in tandem with the cited studies that the aim of the present study is based. This study aims to explore whether the effects of segregation in pre-democratic South Africa are still prevalent and perpetuate racial segregation in a constitutionally desegregated community.

2.4 The Transitional Period

This period of reform introduced a series of carefully planned changes into the social order. Reform occurred at the level of labour-market policies, educational budget allocations and political legislation. The peculiar period of racial segregation and enforced legislative laws was confronted with a new breed of political thinkers (Harvey, 2001).

Also very significant in 1985, was the offer to release Mandela if he 'unconditionally renounced violence as a political instrument', that is, disown the ANC's armed struggle. There were fears and apprehension, on both sides of the racial divide, of a violent revolution in the country. These were, displaced however, by a peaceful change from a white to a black government. It was a period marked by fears for stability and the unknown with regard to a government by a previously disenfranchised people, a fear of retribution (Harvey, 2001). This period is very important (relevant) to the present study

as it magnifies some of the factors that make the study of racial relations an arduous one. Kinloch (1991, cited in Pettigrew, 1998) established the embedded link between institutional situations and societies as regulating the structure and effects of contact situations.

2.5 The new South Africa

It was expected by many in the country that the new dispensation would bring with it renewed hope and a sense of euphoria. The people of different races were at last free to engage in meaningful contact. Restrictive laws were replaced with a government plan advocating for peace and prosperity for all South African citizens

2.5.1 Description of the Political and Legislative Change

The 1960-1970s became a pivotal era for the Afrikaner Nationalist government, as it confronted increased black resistance, and its tightening of apartheid legislation. The government also faced increased pressure from the outside world. South Africa also experienced a shift in the government's land policies. Some of the underdeveloped areas (land) were declared independent homelands. This attempt at alleviating outside and internal pressure resulted in an increment of faction fighting within the black communities. Economic boycotts from international sources added pressure on the government to reform. There was a weakening of the Nationalist Party (NP), and increased internal conflict within the NP. The early 1980's witnessed the signs of the weakening of the ruling party (government), and by the late 1980, the dismantling of the apartheid regime (Harvey, 2001).

Although the reforms introduced by the Nationalist government were considered doubtful, the shifts in essence were an aid to black resistance. The reforms encompassed changes in educational budget allocations and political legislation. The state of emergency was lifted and blacks could move around without security forces intimidating them. As black resistance increased, South Africa saw the release of Nelson Mandela, the leader of the ANC, and the unbanning of the organization. The successful election of this party (ANC) into government followed (Harvey, 2001).

There was widespread fear by most whites in South Africa that the new government would engage in revenge. This was followed by fears of a violent revolution, especially as the Right Wing (a group of revolutionary Afrikaners), was opposed to a black rule. However, these fears were replaced by a relatively peaceful, national jubilation of the democratic election of the ANC into power (Harvey, 2001).

Notwithstanding the jubilation and perceived peaceful transition from apartheid to a democracy, there were people in the country who were not satisfied. Black people still found it difficult to enjoy some of the legal changes, example: repeal of the Group Areas Act, as this did not change their financial plight. They still could not afford the kind of homes that they desired. This amounted to the continuation of separate living space, and therefore lack of intergroup contact, in a society marked by a long history of injustice and conflict (Saaf, 2001).

The right wing representing the Afrikaner people was bent on destabilizing the country by advocating for a volkstaat. This Afrikaner resistance was not successful as the majority of the population wanted a change in the system. Attitudinal changes among the people were engendered by the nations' overt action towards democracy (Harvey, 2001).

2.5.2 Anti-Discrimination Legislation

South Africa witnessed desegregation in areas like the education, residential areas, transport, health, the workplace, social mobility and the scrapping of Immorality Act of 1950. Blacks could compete for jobs without the fear of racial discrimination or the Job Reservation Act. Schools were the breeding ground for an active attitudinal change between the different racial groups. Theoretically, children were afforded the opportunity to be in ideal contact situations. Optimism led many to believe that desegregated schools would improve intergroup relations. Schools were also expected to provide children with regular proximity in contact situations, thus enhancing the possibility to change racial categorization (Schofield & Sagar, 1977).

People were now by law able to live where they wished and to purchase homes without fear of intimidation. Restrictions on social mobility were lifted resulting in people being able to move freely around the country. Black schools in the townships witnessed a change with regard to educational facilities, however, not on a par to previously whites only schools. There has been an improvement and development of recreational facilities and health clinics in black townships. Although there was an influx of black students into the previously white schools, it appears that some blacks still preferred their children

being in their township schools, a cost factor. Another fact influencing the changes is that some people still cannot afford to maintain the competitive nature of this democracy (Saaf, 2001).

2.6 Repeal of Apartheid Laws

The past decade has brought forth a process of change and overt social and political reform. South Africa has undergone rapid transformation as a black government came into power after the country had its first democratic elections in 1994. This resulted in a new constitution being implemented, aimed at discouraging racism and striving towards a unified country. Desegregation denotes the existence of conditions that are conducive to a change in intergroup attitudes. In other words, desegregation is supposed to refer to conditions that improve intergroup contact (Brewer & Miller, 1984).

In South Africa, desegregation pertains to the repeal of all policies that perpetuated interpersonal and intergroup contact in racial terms. Hence, with regard to the contact theory and one of Allport's factors, support of the state to engender a reduction of prejudice and conflict, has produced variable results. Though posited by Mynhardt and du Toit (1991); Pettigrew (1998), the presumption that by abolishing segregation, people or groups would have an equal status in the contact situation; this appears to be divergent to observed intergroup behaviours.

This appears to be true of the South Africa situation, as the laws are believed to make it possible for people from different groups to have more opportunities for contact. Schools

seem to be opportune “places” for such contact. According to this hypothesis, if the discriminated groups come into contact under the four conditions there is potential for equal status and cooperation to exist and thus, tension and hostility between groups can be reduced (Brown, 1995).

Desegregation in residential areas was also observed in a South African study. Runciman (1966) found that residential proximity increased contact between White, Coloured and Indian residents. This study supports the notion of attitude change, as contact between the different groups was associated with friendliness. Thus, intergroup contact should occur devoid of racial categorizations. This phenomenon, (racial categorization), as emphasized by the social identity theory posits that, “an individual’s personal identity is highly differentiated and based in part on membership in significant social categories, along with the value and emotional significance attached to that membership” (Brewer & Miller, 1984). Intrinsic in this assertion is the idea that intergroup contact or actions towards others will be in terms of their resultant group membership rather than their personal identity.

Given this phenomenon, segregation is enhanced and intergroup contact is reduced, as there is no reduction of prejudice and hostility towards out-group members. Evidence based research, as indicated by Pettigrew (1998) found that whites and blacks in desegregated housing projects felt more positively about the other group in comparison to segregated areas. It appears that racial categorization is prevalent and determines how people from different racial groups use space in social situations. The study by Dixon and

Durrheim (2003) of some varieties of informal segregation supports the effects of this phenomenon. Their study showed the lack of attitude change between the different races as evidenced in the lack of intergroup contact in the use of space on the beaches.

2.7 THE FORM AND PATTERN OF SOCIAL CONTACT IN POST- APARTHEID SOUTH AFRICA

2.7.1 Residential clustering

Literature on research conducted in the United States of America, searching for racial attitude change amongst different groups, yields conflicting results (Massey & Denton, 1993; Krysan & Farley, 2002). According to such studies, there seems to be a modest decline in black-white segregation in residential areas (Massey & Denton, 1993; Krysan & Farley, 2002). These studies further argue that this decline appears to be the case within the American society since the prohibition of racial discrimination in 1968. There is also a suggestion that such societal change has provoked a competing hypothesis. This hypothesis refers to the notion that blacks prefer not to live in racially isolated neighbourhoods and are reluctant to live in largely white areas. However, this hypothesis has not been subjected to empirical scrutiny (Krysan & Farley, 2002).

In the South African context, Christopher (2001) is of the opinion that enforced separation is active because of whites' maintenance of economic mobility. He further states that in comparison to the American studies, (Massey & Denton, 1993; Krysan & Farley, 2002), legal constraints and the manipulation of the property markets are significant in maintaining and enforcing residential segregation. It follows then that, in

the new democratic South Africa, the progress of integration of the white population establishes the perceived desegregation of residential areas. Seidman (1999) is of the opinion that racial patterns or attitudes may be resistant to change in post apartheid South Africa. This resistance is based on the perspective of symbolic racism, suggesting dominant cultural beliefs about other groups, ingrained during socialisation shaping rigid racial categories.

2.7.2 Spatial factors

According to the study by Krysan & Farley (2002), some of the pertinent issues regarding intergroup contact are spatial competition, contagion and spatial density dependence. Spatial contagion appears to inform the manner in which people from different racial groups behave.

Krysan and Farley (2002) explain spatial contagion as referring to the diffusion of innovations showing that behaviours spread through interpersonal communication and observations, which is especially strong among persons who have some pre-existing social relations. Accordingly, this diffusion occurs because of transferring knowledge of what kinds of behaviour that both can and should exist and by transferring knowledge on how to transact with a given community. Spatial competition refers to the blurring of boundaries of a social system. With reference to black-white social issues, it means that the different races struggle for limited resources in terms of space. Black-White relations seem to be affected by a strong pre-existence of segregated social relations between the groups (Krysan & Farley, 2002).

Spatial competition is relevant to the South African situation as it is at the core of previous segregation laws. These laws were designed especially to curb spatial competition. Thus, blacks had to contend with the areas that were demarcated for their use. The knowledge that was transferred by the white population to the masses was to the effect that there should be 'different areas for different racial groups'. It becomes clear that pre-democracy laws were engineered to separate people according to racial lines. Laws on black mobility or migration highlight the issue of spatial density. South Africa is presently confronted with litigation problems pertaining to 'gated communities'. These communities are an extension of the white populations' need to regulate racial numbers in their so-called 'white communities'. The above could be considered as white spatial privilege (Krysan & Farley, 2002; Massey & Denton, 1993; Christopher, 2001; Hook & Vrodljak, 2002).

Massey and Denton (1993) seem to support the notion of a pre-existence of segregated social relations by asserting that it was a manufactured and purposeful arrangement, instituted by whites. These researchers also posit that such segregation spirals into poverty and the decline of black residential areas. Consequences of such segregation and social poverty are spatially concentrated leading to racial isolation and economic deprivation.

Access to opportunities, resources and benefits in a segregated community perpetuates the black underclass. Thus, black mobility to reside in affluent areas is hindered by socio-economic status and geographic differentiation. The trend that appears to prevail is that

whites flee negative residential areas, those infiltrated by blacks, as soon as they achieve affluence (Krysan & Farley, 2002). Massey and Denton (1993) are also of the opinion that segregated residential areas incorporating separate amenities contribute to blacks sharing few political interests with whites.

The persistent nature of racial segregation seems to be influenced by the transfer of effectual information within each group. This suggests that intergroup contact follows intragroup transmissions between individuals knowledgeable about a given group and those lacking such knowledge. It is also conceded that within-group social networks are formed in this manner (Krysan & Farley, 2002). Thus, as stated by Krysan and Farley (2002) social networks mediate the manner in which in-group members act in intergroup social situations.

People tend to cluster temporarily, suggesting that similar processes of cumulative causation are at work (Krysan & Farley, 2002). This has been the phenomenon in South Africa and it seems to be the case despite the changes in the laws of the country. South Africa is characterized by a fear of racial crowding (density) by one group over another. Dixon and Durrheim (2003) observed in their study of the beaches in South Africa that whites and blacks appeared to use 'space' at different times of the day. According to the same authors, "it was also evident in broader patterns of racial dispersal, in the 'unevenness' of racial distribution across different areas of the beachfront" (p. 12).

2.7.3 White flight

Krysan and Farley's (2002) study of urban inequality examined black's preferences and the related issue of what drives those preferences. This study targeted African American perceptions of intergroup racial bias in residential areas. The findings were that African Americans overwhelmingly prefer balanced (50-50) areas. It turned out that this density, an equal number of black-white, was far too high for whites. The researchers state that black preferences are not driven by solidarity or neutral ethnocentrism but by fears of white hostility. This study also reveals that blacks are willing to move into largely white areas if there is a visible black presence. While this is true, it also turns out that white preferences also play a key role, as they appear reluctant to move into areas that have more than a few blacks, what whites' term negative residential areas (Massey & Denton, 1993).

The South African situation presents an expectation that desegregation will determine contact at different rates given the particular city or province. Christopher (2001) found out that census results for 1996 revealed a marked difference to changes in segregation levels between the nine (9) provinces in South Africa. "Indeed, the white population was able to maintain virtually unchanged levels of physical separation from the remainder of the population throughout most of the country" (Christopher, 2001, p.453). Thus, according to the same author, the changes are due to not only the race factor but also a specific urban environment.

White flight is evidenced by such events as the rivalry with blacks in the informal settlements in Cape Town cities like Noordhoek, Milnerton, as 'black encroachment'. Whites fear that their numbers are at stake and that their lives are in danger, given the high crime rate where blacks are concerned. Others feel that while these may be genuine concerns, they are couched in economic connotations. Johannesburg is also faced with whites fleeing city centres because of 'black invasion' (Morris, 1999). Quite similar to Cape Town, whites are erecting what Hook and Vrodljak (2002) term 'gated communities'. It would seem that white flight is influenced by what is a fundamental cleavage, the 'black race'.

Such research results highlight the pervasive nature of racial segregation even in desegregated communities. Group preferences suggest patterns that exist in intergroup contact situations as suggested by the concepts of spatial contagion and spatial density (Krysan & Farley, 2002).

2.7.4 Residence

Another study by Cohen (1999) highlights that a higher proportion of blacks increases a perception of threat on the part of whites and provokes a greater deal of discrimination, leading to a greater gap between black and white interaction outcomes. This white perception (hypothesis) receives support from research showing the association between increased black-white contact and racial discrimination or intergroup tensions. Could this perception of threat explain white flight from previously whites-only residential areas?

Other researchers, Forsett and Kiecolt (1989, cited in Cohen, 1999) are of the opinion that white's fear of threat decreases their (white) support for racial integration. Increased black-white contact has been shown to provoke opposition and race riots in America. These researchers further assert that showing racial mobilization in the wider community requires evidence of collective action, that which cannot be assumed from cross-sectional studies of white racial attitudes.

Saff (2001) highlights the pervasive nature of segregation in Cape Town by noting the rationalizations that white South African homeowners engaged in to keep the area white. The argument of black squatters devaluing the area seems to be the thread that enforces white-black perceptions with regard to living spaces. Some of the inherent in-group stereotypes are evidenced by one of the white dwellers stating that it would be like having to listen to 'their drums'. There is also an underlying connotation of having to cleanse the white suburbs of black invasion. The use of politically correct language in enhancing segregation appears to be the thrust of 'whites only' argument in Milnerton, Hout Bay and Noordhoek. Segregation, according to Saff (2001) is understood in a convincing property value argument.

The South African context is also characterized by new segregation tendencies, commonly known as 'gated communities' (Hook & Vrodljak, 2002). These refer to city dwellings enclosed within high walls, the rationale being the fear of crime. The present legislative rules have engaged in bitter wrangle with such communities to bring these walls down. According to Goldberg (1998), this connotes a form of segregation. The

distinction, however, from the old enforced segregation, is that it does not incorporate state support.

2.7.5 Education

Maoz (2002) also highlights this phenomenon in his study of Jews and Arabs by indicating that even under controlled contact encounter, Jewish and Arab students ultimately segregated into own groups. Research by Schofield and Sagar (1977) shows that in desegregated and ethnically mixed settings such as schools, universities, communities and even churches, contact within the same ethnic group is more frequent than intergroup contact.

The phenomenon of individuals segregating in ideally desegregated contact situations seems to be prevalent in South African society. People in social situations tend to migrate into own groups even when such intergroup contact receives institutional support, and may use various strategies to segregate themselves by their original ethnic groups. It appears based on the above studies that the phenomenon of individuals to cluster in own groups is common amongst students during their break.

Goldberg (1998) distinguishes between two types of segregation. The 'old segregation', according to Goldberg (1998), is an activist segregation produced by an interaction in politics, economics and culture. It is similar to the apartheid regime in South Africa. Patterns that were enforced related to sanctioned segregation according to race. People were expected to live and associate with in-group members. The 'new segregation',

according to Goldberg (1998), is subtle, informal and dangerous. People's preferences are considered to propagate this new segregation. The preferences for segregated spaces are considered indirectly produced and ideologically managed. It appears that such a change indicates a shift in reasoning about segregation, which is a change in the rationalization of segregation (Goldberg, 1998).

This new segregation is accompanied by a set of hardly stated assumptions. These assumptions allow people to rationalize segregation. The same assumptions are firstly, that segregation is taken as the norm, the natural and a given. Secondly, social standards are represented as mainly white, and they are assumed as the norm that represents excellence. There is an inherent presumption that other people should aspire to such norms. The foregoing seems to feed into the existing social patterns that pervade South African society to this day (Goldberg, 1998).

Patterns of segregation are apparent even within the university setting. Attempts to address racial discourse and to establish contact between various race groups seems fruitless. Students are afforded the opportunity to engage in intergroup contact at the start of their university careers but it seems that this opportunity is passed up. Such a phenomenon tends to impact negatively on lecturers who interact in interracial contact with students engaged in a common goal. Conversely, students may be required to engage in cooperative group work. The potential for acquaintance exists, (Maoz, 2002) and there is institutional support for this ideal contact situation. However, segregation exists within these lecture theatres. Research in other educational contexts has found that

this is also the case, that is, a lack of integration despite the contact (Garcia, Dell Castillo & Úmpierrez, 1997).

By clustering into in-group and out-group in contact situations, for example, by using different sitting positions in class, students engage in a discourse of racial differentiation. This situation produces a difference through discourse that legitimizes the rationalization and activity of using different spaces for different races. These rationalizations, which are actually forms of attitudes, do work to maintain segregation. This phenomenon confounds the process for the possibility of any contact occurring because people segregate and interact within their own race groups avoiding intergroup contact. Thus, the criterion of acquaintance potential for example, is clearly not being met, due to the spatial differences that are being produced. These differences make it difficult for frequent and positive contact to be made, which in turn hinder chances for integration to occur (Schofield & Sagar, 1977).

Indeed, it has been observed that the phenomenon of racial clusters is happening at the University. It is with this observation and results from other studies (Schofield & Sagar, 1977; Smith, Stones & Naidoo, 2003) that this study's concerns become pertinent. The current study aims to describe the nature and form of segregation within a supposedly democratic institution. It will highlight how students use space in the cafeteria as a form of racial segregation.

2.7.6 Informal social places

It is also noted that the social, entertainment dimension of people is affected by segregation practices. People tend to engage in psychological discourse to mask segregation. White students, it seems, justify the differences in social activities by relying on stereotypical images of black clubs being frequented by antagonistic and dangerous people of those particular races. This attitude prevents actual contact between the diverse races in social settings (Campbell, Kruskal & Wallace, 1966; Maoz, 2002). According to Pettigrew (1998), prejudiced people usually tend to avoid contact with groups toward whom they are prejudiced. Thus, the disguises are used as a means to avoid contact with other racial groups by not going to certain clubs. These rationalizations inhibit attitude change amongst the people in South Africa.

Again, while conditions for interracial contact appear to be appropriate in these activities, they are still not enough. The question put forth by Maoz, (2002), is whether there is contact at all? It could be argued that this is because inherently students are caught up in their entrenched attitudes in relation to other race groups (Goldberg, 1998).

CHAPTER THREE

3. RESEARCH DESIGN AND PROCEDURES

3.1 Introduction

In this chapter, the aims of the study, research design, sampling design, method of data collection, method of scoring and data analyses will be described. This chapter also includes the procedures for conducting this research. The purpose of this research is to describe how students and others use space in the Hexagon Cafeteria at the University of KwaZulu-Natal, Pietermaritzburg. The methodology of the current research will be compared to the methodology used by other researchers in the similar field of study.

3.2 Research Paradigm/Design

The present research is a descriptive study as the aim is to describe how students use social space. According to Rosnow and Rosenthal (1996, p.15) in descriptive research the goal of the investigation tends to be the careful mapping out of a situation or a set of events.

As this study follows an unobtrusive, observational, quantitative research paradigm, there exists no response bias or distortion of information from experimenter or participant (Mouton & Marais, 1996). The research objective is to describe what is happening behaviourally. Although this method for discovering natural behaviour has been implemented by other researchers such as Schofield and Sagar (1977), there are inherent disadvantages with this method of data collection. In addition to it being time consuming

in acquiring a significant research sample, it also does not explain 'why' a particular behaviour occurs.

Nevertheless observational studies by Dixon and Durrheim (2003), Maoz (2002) and Schofield and Sagar (1977) have been successful in yielding information reflecting spatial dynamics in the seating patterns of different racial groups. The present research design is therefore informed by these previous studies.

3.3 Research Context

The researcher has chosen to use the Hexagon cafeteria on campus, to observe how students use space in a social setting. The cafeteria is situated in a busy and easily accessible place on campus. It is used by students, lecturers, and support staff as well as by visitors. It also caters for plays and functions directed by the Speech and Drama Centre. The Hexagon can be described as a focal point for most students, as it is one of the busy eating-places on campus. It is situated between the Psychology and Commerce departments.

The Hexagon has become the meeting spot for most students during their break times. Some use it to play games e.g. cards. Some students use it as a place to meet and discuss as well as to have fun. Some gather in groups of different sizes and racial class. It is the place best suited to making observations pertaining to the use of social space. As such, it seems best suited to finding out some of the factors that predict the degree of separation between students from different racial groups. Some of these refer to friendship

formation, density in space and the relative proportion of groups in the social space.

There seems to be a greater proportion of male and female students using the Hexagon Cafeteria during breaks. Notwithstanding these preferences, it is a relatively transitory leisure space. It attracts people from diverse racial backgrounds, affording them the opportunity to engage in a neutral environment. This makes it an ideal place to study people in a contact situation.

3.4 Method of sampling

The target population for this research was students from the University of KwaZulu-Natal, Pietermaritzburg. This university was chosen over other Universities because it was convenient for the researcher as the researcher resides in Pietermaritzburg. Specifically, the study was conducted in the Hexagon Cafeteria of the University of KwaZulu-Natal.

The study sample consisted of people using the Hexagon Cafeteria during observation time at the university and the total sample drawn for this study was 2 032. A study of naturally occurring contact was conducted through observation of how students utilized space at the Hexagon Cafeteria.

The participants for the current study were obtained by employing the non-probability sampling technique of convenience sampling, as it enables one to meet the aim of this study. The sample for this study focused on all gender and race groups on the university. The variable gender is generally an important source of social identity, hence pertinent in this study. A probability sample could not be drawn for this research, as firstly, the goal

was to observe students in a natural setting and secondly, the student population patronizing the Hexagon Cafeteria was unknown in size and mobile.

Non-probability sampling was chosen as it offered the benefits of being less time consuming and cost effective. Kidder and Judd (1987) indicate that one does not necessarily carry out studies of samples only for the purpose of being able to generalize to the populations that are being sampled. My aims were to describe the occupancy of the Hexagon Cafeteria during specified (non-randomly) chosen time periods and all occupants during these periods were recorded.

3.5 Method of data collection

Observation is used as the method of data collection as it is regarded as a fundamental aspect of science. Its major strength is precisely that it is direct and captures occurrences of behaviour without time delay. However the study or observation of human behaviour is considered difficult to conduct in an unobtrusive manner. Liam Downey, a sociologist, used a method that focused on geographic distance to determine the levels of residential racial segregation (Downey, 2003). Geographic information system (GIS) allowed the researchers to measure the distance between social groups to predict the degree of separation. However, in this study, the researcher was interested in how students use space within an identified social environment.

Observations for this study were confined to time just before lunch until the end of lunchtime, 11.00am to 2.00pm. These times were chosen because of maximum density over lunch. The dates were chosen from the first week in term, Monday and Tuesday

over four consecutive weeks, to identify changes over time as students interacted and made friends. This period resulted in sufficient numbers of people utilizing the Hexagon (space), with varying degrees of crowding. It is also a uniform lunchtime in the university, thus negating any influence due to faculties being within close proximity to the Hexagon Cafeteria. It afforded the researcher the opportunity to observe as many students as possible.

Students were observed as they walked in to the cafeteria, where they chose to sit and with whom. Some students appeared to ignore tables already occupied by others from a different racial group. Some would even opt to stand outside the cafeteria, even though one person, of a different race, would be occupying the table.

The researcher and assistant manually recorded where students chose to sit, gender compositions as well as time and date. A study of peer interaction patterns by Schofield and Sagar (1977, p.131) used a similar observational method for the measure of voluntary association of students in a middle school. As racial segregation or contact is subtle, this observation method detracts from asking questions or using questionnaires. Its significance lies in the target results, no opportunity for rationalizations for given behaviour.

3.5.1 Coding

The necessary coding for this study occurred during data collection. The format of these codes was simply denoted by the first letter of the relevant race group along with the first

letter of the gender. The coding system was informed by the South African racial classification system. This facilitated speed in accuracy of observations. Black will, for the purpose of this coding procedure, refer to the 'African race group'. A test of the reliability of the coding procedure was established.

Race was coded using the South African racial classification categories, 'white', 'black', 'coloured' and 'Indian'. Adopting the South African racial classification system for the study established validity of the coding procedure. These four race groups are prevalent at the university.

Where there were difficulties in terms of racial classification, the researcher and assistant conferred to establish coding reliability. This coding system facilitated data analysis and coding reliability. The reliability of the coding procedure was very important in the assignment of gender. The researcher and assistant checked for coding errors, by comparing notes, and the results showed a significant agreement on this variable coding, indicating a measure of reliability in the coding procedure.

3.5.2 Method of data analysis

The 'D' statistic was used as an index of dissimilarity to graphically depict how students use social space at the University of KwaZulu-Natal, Pietermaritzburg. Graphs depicting the 'D' statistic provided information about who frequents the Hexagon Café, how they form themselves into social groups and whether these are racially biased in composition. This method of data analysis has been adopted from previous studies (Massey & Denton,

1988; Dixon & Durrheim, 2003). These authors have viewed segregation along five spatial dimensions namely evenness, exposure, concentration, centralization and clustering. Each of these dimensions was assigned a specific index: 'D' for evenness, 'xPy' for exposure, 'RCO' for concentration, 'SP' for clustering and 'ACE' for centralization. These dimensions were used as a whole in reflecting the degree of segregation (Massey & Denton, 1988).

The study by Dixon and Durrheim (2003) validated the usefulness of these dimensions. However, only evenness, exposure and clustering were used as indices in their study. The current study however chose the dimensions of evenness and clustering to understand spatial dynamics within the identified social space. The dissimilarity index is used to depict the evenness of the distribution of the races in the Hexagon Cafeteria. This index yields scores ranging between 0, for complete integration, to maximum of 1, representing complete segregation (Massey & Denton, 1988).

The Statistical Package for the Social Sciences (SPSS-11) software, specifically designed for the calculation of the target indices, will serve as the mechanism for data analysis. The syntax for the analysis of data was designed to yield an almost accurate depiction of the social complexion as observed in the Hexagon Cafeteria (refer to Appendix B).

The formula (see below) was used to compute 'D' for density or dissimilarity for the different racial groups. These were denoted by: 'dblack'= density for blacks, 'dindian'= density for Indians and 'dwhite'= density for white students (refer to Appendix B). An

absolute value for the different density values was expected to vary between 0 and 1. A minimum score of 0 represents no segregation or integration, whilst a maximum score of 1 represents complete segregation (Massey & Denton, 1988). The calculation of the “D” index as per Massey and Denton (1988) is defined by the following formula:

$$D = 0.5 \times \sum | (b/B - w/W) |;$$

where ‘b’ and ‘w’ are the ‘black’ and ‘white’ population counts in the social space, and ‘B’ and ‘W’ are the ‘black’ and ‘white’ population counts in the entire study area. For the purposes of this study, ‘social space’ refers to the 19 tables in the left or right sections of the Cafeteria; and the ‘entire study area’ was the total area (left and right sections) in the Cafeteria.

The formula used in this study was adapted to cater for the three target racial groups:

$$D = 0.5 \times \sum | (r/R - o/O) |;$$

where ‘r’ denotes a particular racial group count in the social space, and ‘R’ for the population counts per-race in the entire study area. Similarly ‘o’ denotes other racial groups in the social space (for example left or right side of the Cafeteria), and ‘O’ for the population counts per-race of ‘other racial groups’ in the entire study area. In essence this means: black vs. other, white vs. other and Indian vs. other (Krivo & Kaufman, 1999).

The syntax, (refer to Appendix B), was used to compute 'D' statistics for the various racial groups. A correlation analysis between the data output of 'D' based on the two sides (left-right) of the Hexagon Cafeteria was calculated. The proportions of students in space per table, across tables by gender and race were computed. Further, calculations of the ratio between males and females were computed as well as the 'D' values for both genders in the total social space. The aforementioned proportions were depicted graphically and the results interpreted (see chapter 4).

3.6 PILOT STUDY:

Procedure

At the beginning of the observation procedure, the researcher and assistant sought to gain orientation of the total setting and charted out the Hexagon floor plan (refer to Appendix A). The researcher and assistant chose a vantage point in the Hexagon Cafeteria to make observations. This enabled the full view of all seating. The occupant's race membership was recorded using symbolic codes. The observers recorded the different times that a student either sat or left a table, their race, gender and date. Race was coded according to the four prevalent race groups at the university, 'White', 'Black', 'Coloured' and 'Indian'. An example of the data-recording template is reflected in table 3.1. Intended for the pilot study, observation sessions lasting one hour were conducted from Monday to Friday between 13.00-14.00hrs. This time resulted in adequate numbers of students using the Hexagon Cafeteria being observed.

Table: 3.1 Data collection template

Gender	Race	Sit-Stand	Table number	Time	Date
2	4	0	5	11.00	
2	4	1	5	11.07	
1	4	0	5	11.21	
2	1	0	3	12.32	
1	3	0	7	12.45	
2	1	1	3	13.15	
1	2	0	4	13.50	
2	1	0	6	13.50	
1	4	1	5	13.55	
1	4	0	13	14.00	

Coding and checking of the inflow and outflow of students proved quite arduous, as it required one to be systematic and alert to details. Therefore the researcher enlisted the services of an assistant for this process. Tables were marked and the observation site divided into left and right-hand sides (refer to Appendix A). Nevertheless this pilot study was conducted because according to Oppenheim (1996) a pilot study can save a great deal of time, money and frustration because errors that can drastically influence the validity and actual processing and interpretation of data can be traced and corrected in time.

3.6.1 Results of the pilot study

A graphical representation of the observation results is depicted in Appendix C. The overall proportion of Black, White, Coloured and Indian students that eat at the Hexagon Cafe constitutes 25.7%, 43.4%, 3.9% and 27.0% students respectively (refer to Appendix D). These proportions are presented in both a bar graph and pie charts.

These graphs however do display a shift in the disproportion of black–white student population. The Statistical Package for Social Sciences (SPSS) was used to compute the unevenness of the racial distribution across different tables in the cafeteria. This was achieved by calculating one of the previously mentioned indices, in this case ‘D’ for dissimilarity. Research in this field attests that ‘D’ is a property widely regarded as central to understanding racial segregation (Massey & Denton, 1988; Dixon & Durrheim, 2003).

The results of the pilot study suggest that Indian and White students mostly patronize the Hexagon Cafe. However, these results could also be a mere indication that Indian and White students use the Hexagon Cafe as a common social space. The graph begins with a ‘D’ value of 0.5 for black and Indian students. This ‘D’ value translates to there being no black and Indian students at the start of observations. It is however, interesting to note that the graph fluctuates radically over time indicating movement in the Cafeteria as students begin to flock in. Furthermore, white students are depicted as racially segregated from other race groups (‘D’ value of 1). This isolation persists throughout the day. It is noted that black and Indian students display points of integration as time passes. These

points are noted as case numbers 113-145. However, the graph displays total integration between Indian and black students towards the end of observations.

It was further observed that students tended to congregate in homogenous groups, indicating a tendency to define territories around the Hexagon Cafe. These 'racially demarcated' areas have somehow become recognized and identified as places for groups. These pictures are presented in Appendix E.

On average, ten tables were occupied by homogeneous groups of students. These were between four and twenty students per table. On observation, the highest number per homogeneous group per table (baseline) were as follows: White: six (6) students; Coloured: two (2) students; Black: seventeen (17) students and Indian: twenty (20) students (refer to table 2).

Table 3.2: Distribution of Subjects - Pilot Study Sample

Total	Male	Female	White	Black	Indian
152	58 (38.2%)	94 (61.8%)	66	40	46

The above table excludes coloured students, as they did not form part of the final analysis for the study.

3.7 Final study

Eight observation sessions lasting three hours were conducted for the final study. However data for two observational days dated 2-3rd March 2004 will not be included in the final analysis due to them being incorrectly coded. The final study thus consists of data collected on 17-18, 24-25 of February and 9-10th March 2004. Observations were conducted between 11.00am-14.00pm. This time period is just before lunch break and thus resulted in sufficient numbers of students utilizing the observation space.

CHAPTER FOUR

4. PRESENTATIONS AND ANALYSIS OF DATA

4.1 Introduction

This chapter will present all pertinent statistics for describing how students utilize social space within the Hexagon Cafeteria at the University of KwaZulu-Natal, Pietermaritzburg. The results will reflect the racial dynamics with regard to whether students tend to integrate or segregate in a social environment. Race appears to be a powerful factor in student seating patterns at the Cafeteria.

4.2 Distribution of Students - Final Study Sample

The final study sample focused on three race groups namely black, white and Indian. The total sample size for the entire study consisted of 2032 students. The study took place over eight days and the racial proportions fluctuated per day. The composition of the final study sample is as follows (See Table 4.1 below).

Table 4.1: Distribution of Subjects - Final Study Sample

Day	Total Number	Males	Females	Black	White	Indian
17/02/2004	426	174	252	74	202	150
18/02/2004	416	132	284	55	165	196
24/02/2004	90	42	48	12	36	42
25/02/2004	381	143	238	39	113	229
09/03/2004	373	103	270	38	119	216
10/03/2004	346	134	212	46	95	205
TOTAL	2032	728	1304	264	730	1038

Key for graphs: 'D' statistic

'D' for gender tables---depicts gender unevenness across the 19 tables.

'D' for race tables—shows the relative isolation of this group from the other two across the 19 tables.

'D' for gender left/ right--shows gender unevenness across the two sides of the Hex cafe.

'D' for each race group –shows the relative isolation of this group from the other two across the two sides.

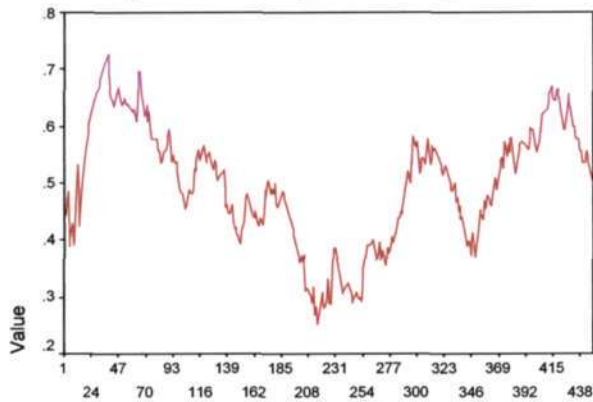
'D' for gender numbers---shows gender unevenness in the total space (Hex cafe).

'D' for race numbers---- shows racial unevenness in the total space (Hex cafe).

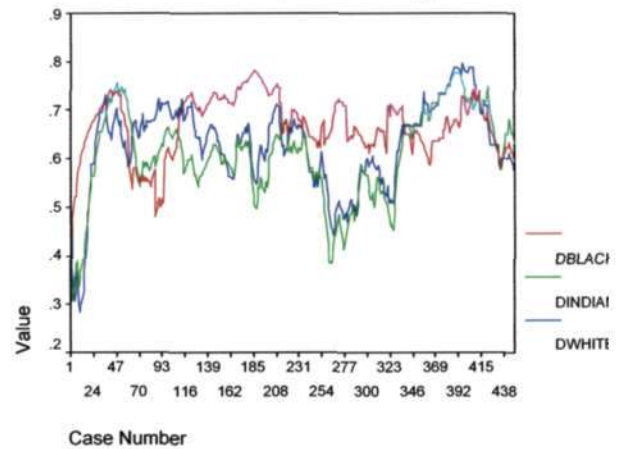
4.3 Analysis of Graphs

4.3.1 Figure 4.1: Graphs-17 February 2004

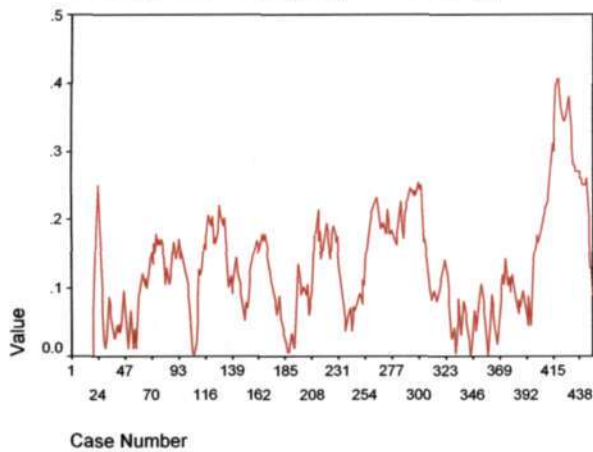
D for gender tables (17 February)



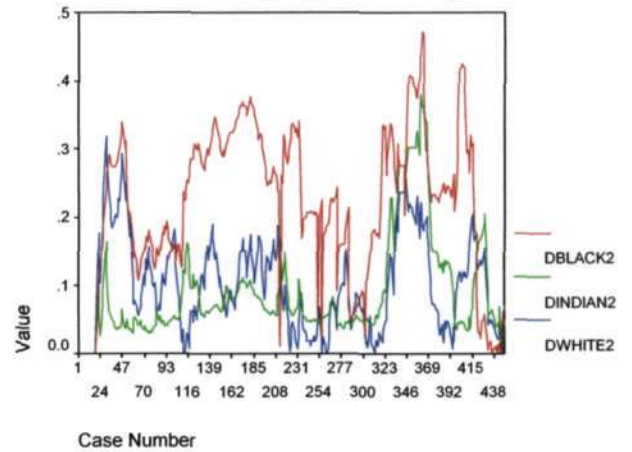
D for race tables (17 February)



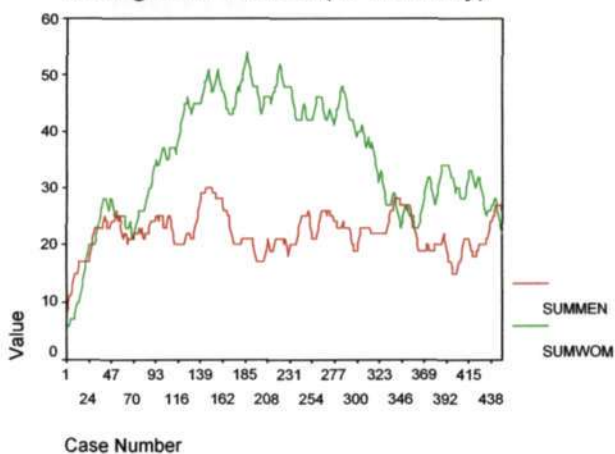
D for gender left/right (17 February)



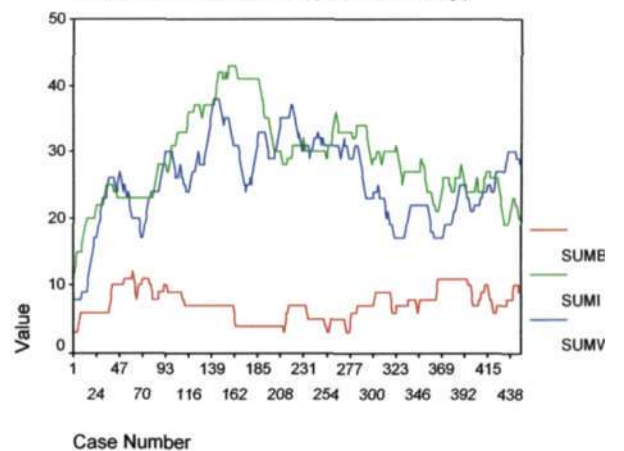
D for race left/right (17 February)



D for gender number (17 February)



D for race numbers (17 February)



Interpretation

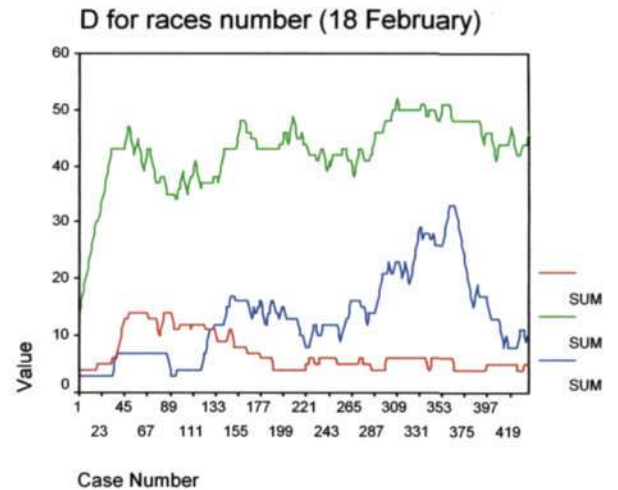
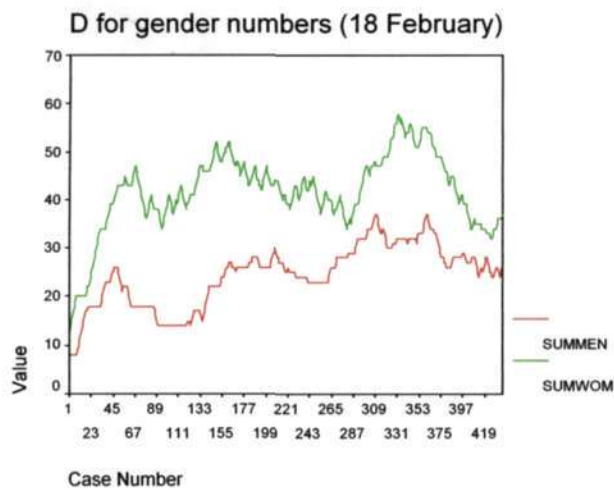
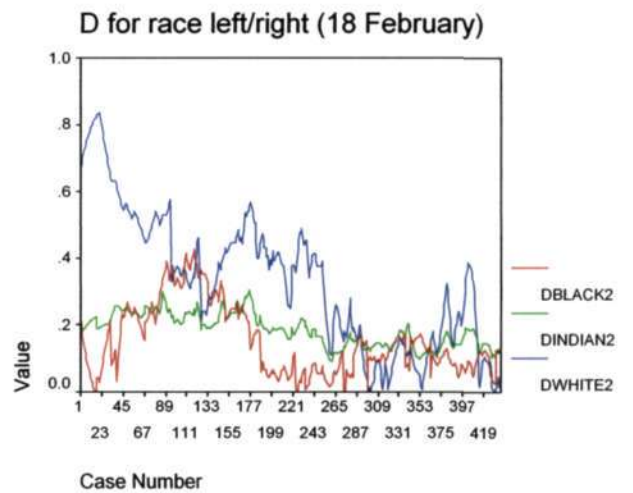
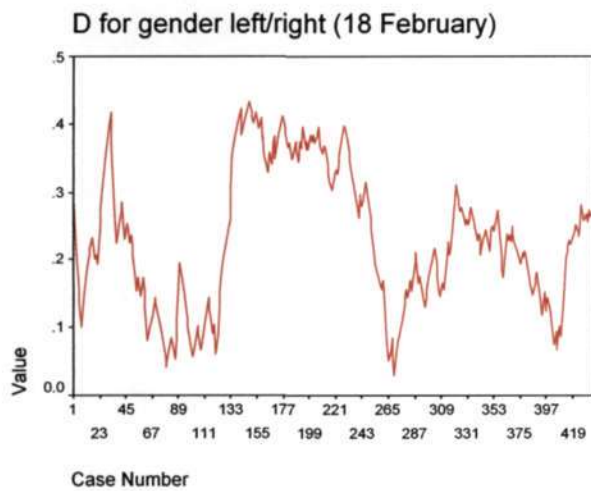
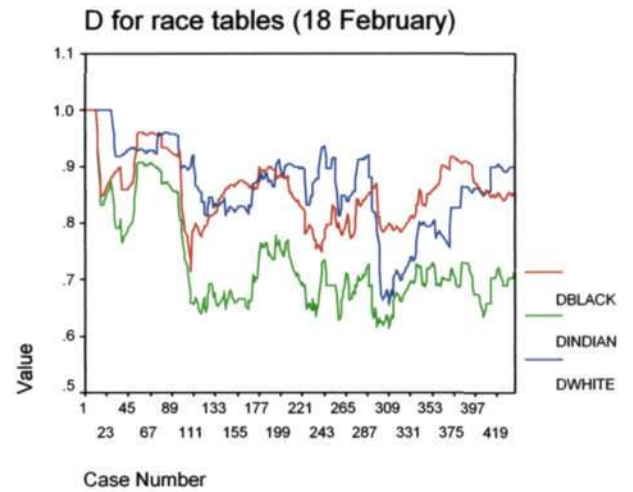
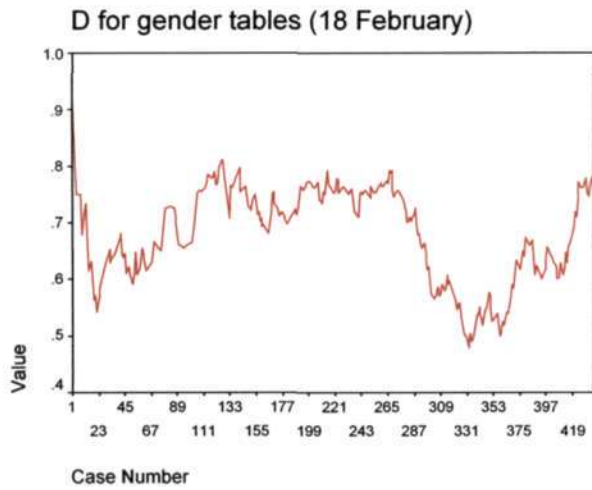
On this day 426 students were observed at the Hexagon Cafeteria. The racial proportion of students observed is as follows: 174 males; 284 females; 74 black; 202 white and 150 Indian students.

The graph for the 19 tables per race shows that black students are relatively more isolated from the other races. White and Indian students tend to choose tables within close proximity of each other. It is further noted that as more black students leave the place the other races tend to cluster in homogenous groups. This graph indicates that as time passes, some form of integration between the races is noted.

The graph depicting the racial composition of the left and right hand sides of the Cafeteria indicates 'D' fluctuations. The left/right graph for gender begins with total integration for this observation day. The graph for race for black students appears to fluctuate quite frequently. 'D' changes markedly when black students either enter or leave the Cafeteria. Black students tend to be relatively isolated when they are present. The high 'D' value indicates that a higher proportion of black students need to be displaced in the room to bring about evenness between the races.

The results of the 'summen-sumwom' graph show that more female students utilize the Hexagon Cafeteria than males. Furthermore, there is an indication from the graphs that both genders are equally distributed throughout the total social space of the Cafeteria. Black students in comparison to other races are depicted as very few in the social space.

4.3.2 Figure 4.2: Graphs-18 February 2004



Interpretation

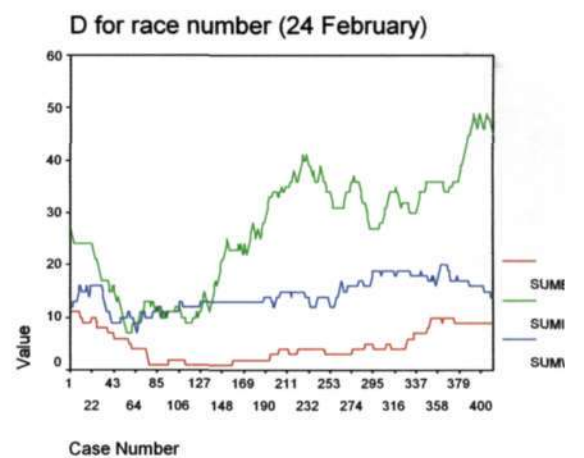
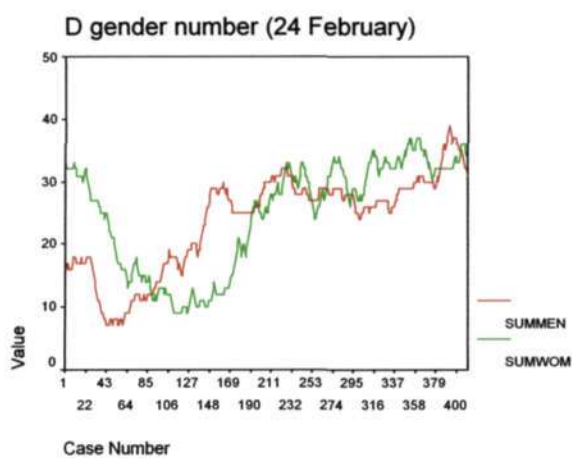
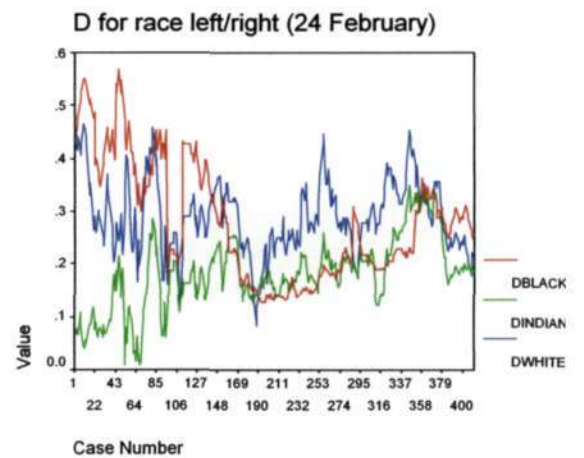
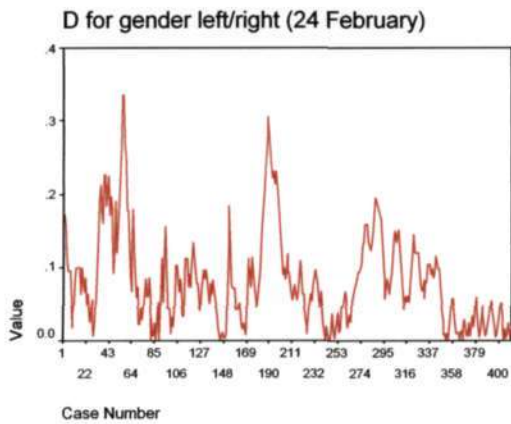
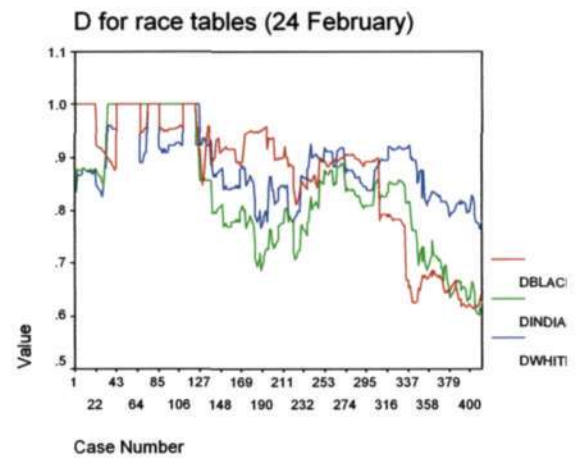
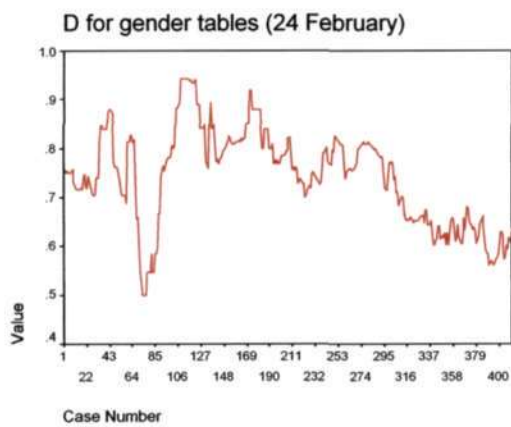
Observations on this day began with whites, blacks and Indians represented by 3, 4 and 14 students respectively. The racial proportion of students observed on this day totaled 416 students of which 132 were males; 284 females; 55 black; 165 white and 196 Indians.

An analysis of the graph indicates that the three racial groups per table were initially segregated as depicted by 'D' value of 1. The graph for gender across tables shows high levels of segregation (0.9) that seemed unchanged for most of the day. However, as time passed there was a gradual shift towards integration between the three racial groups.

Indian students are in the majority at the Cafeteria in comparison to other racial groups. It is interesting to note that on this day white students appeared to be the isolated racial group, whilst black and Indian students were evenly distributed on both sides of the Cafeteria. This is indicated on several points of integration on the graph (see case numbers 67-89, 155-177). Towards the end of the observational time, total integration between the three racial groups was highlighted.

Similar to the previous day, a high proportion of female to male students was observed as depicted on the 'summen-sumwom' graph. The graph for race shows black students as the least represented racial group in the social space.

4.3.3 Figure 4.3: Graphs-24 February 2004



Interpretation

A total of 90 students were observed on this day as follows: 42 males; 48 females; 12 black; 36 white and 42 Indian students. Indian students as previously noted still remain in the majority in comparison to other racial groups at the Cafeteria.

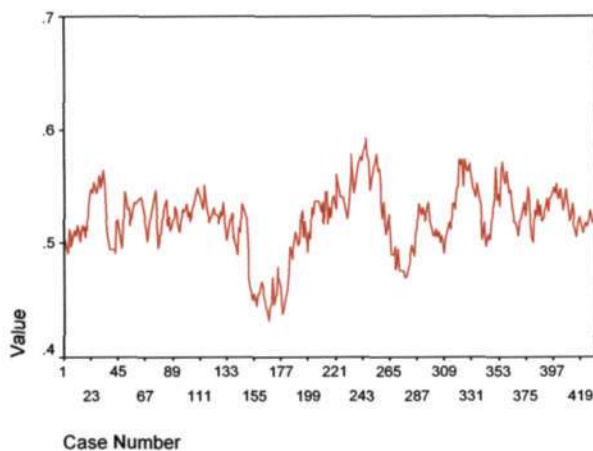
The race per table graph displays that black students are totally segregated in the Cafeteria. This is indicated by the 'D' value of 1. A change was observed from an initial integration between white and Indian students towards total segregation. It is noted that the three races maintain this total segregation for the first part of the day. However, towards the end of the observational time integration between the three racial groups was highlighted. The graph further displays black students as being remotely isolated from the other racial groups as time passes.

The graphs depicting both genders within the left and right hand sides of the Hexagon Cafeteria suggest that they are unequally distributed. However, there is an indication of evenness between the genders towards later on in the day. It is further noted that female students constituted the majority, which is consistent with previous graphical representations.

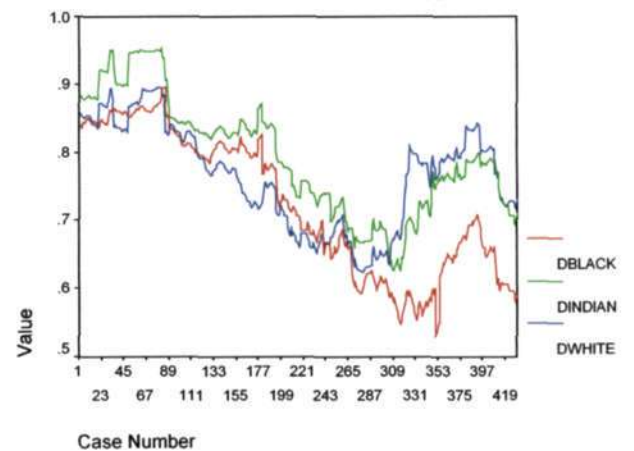
The graph for race total numbers points out, once again, that black students constitute the lowest proportion within the social space. Quite interestingly though white students appeared to have maintained the same proportion at the beginning and end of the current day of observation. Indian students on the other hand appeared to increase in proportion significantly throughout this day.

4.3.4 Figure 4.4: Graphs-25 February 2004

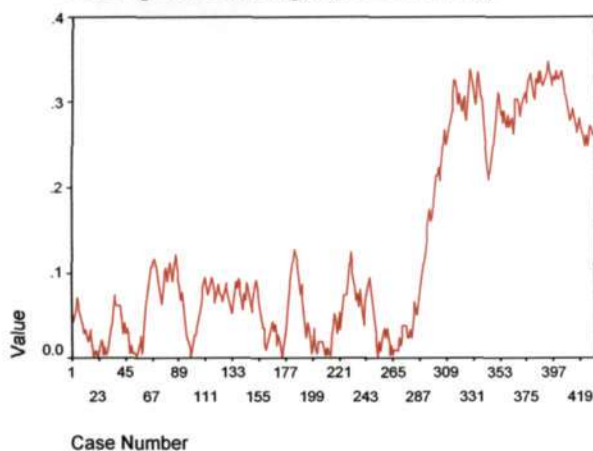
D for gender tables (25 February)



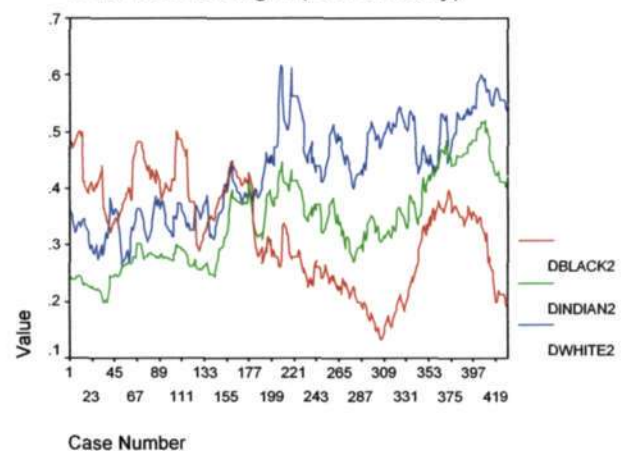
D for race tables (25 February)



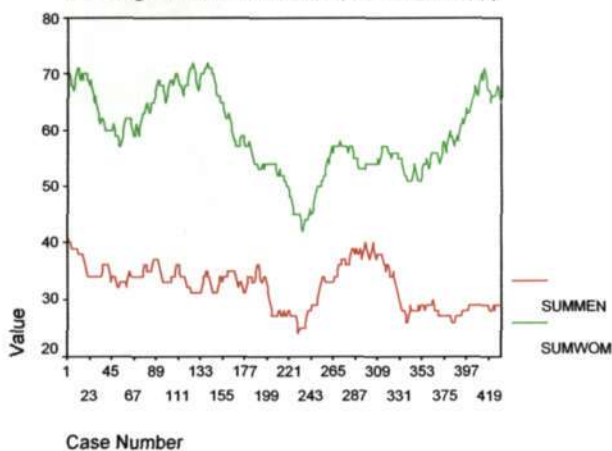
D for gender left/right (25 February)



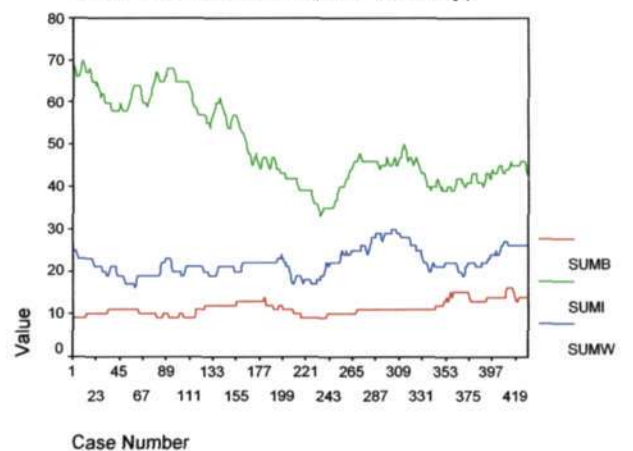
D for race left/right (25 February)



D for gender numbers (25 February)



D for race numbers (25 February)



Interpretation

Figure 4.4 (above) displays a graphical representation of data collected on the second week, fourth day of observations. The total number of students observed on this day was 381. This observation sample consists of 143 males; 238 females; 39 blacks; 113 whites and 229 Indians.

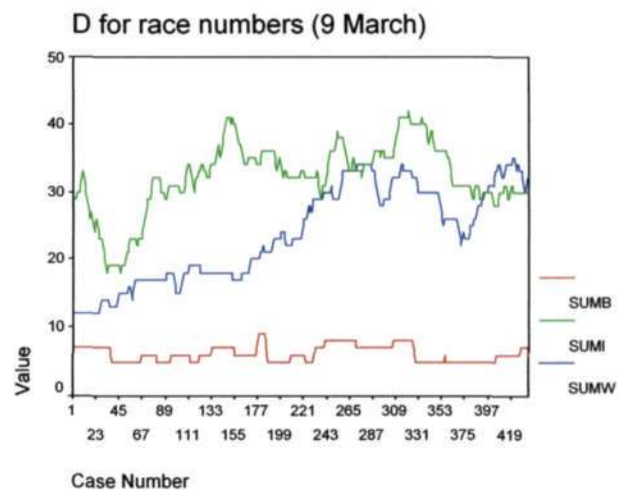
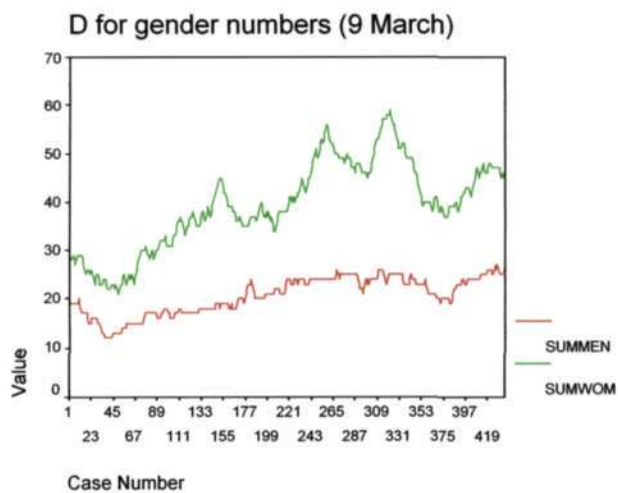
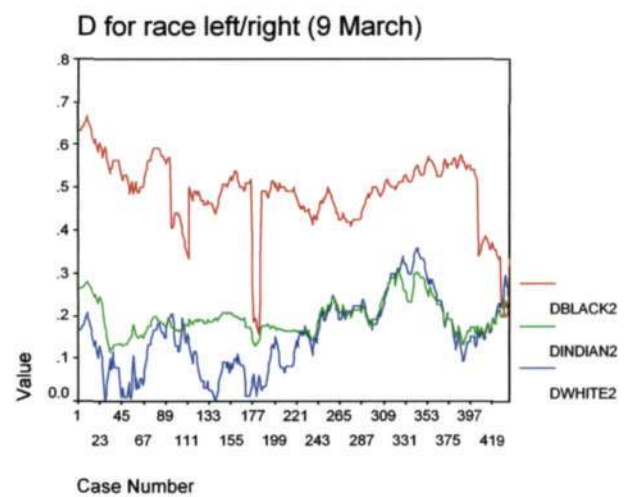
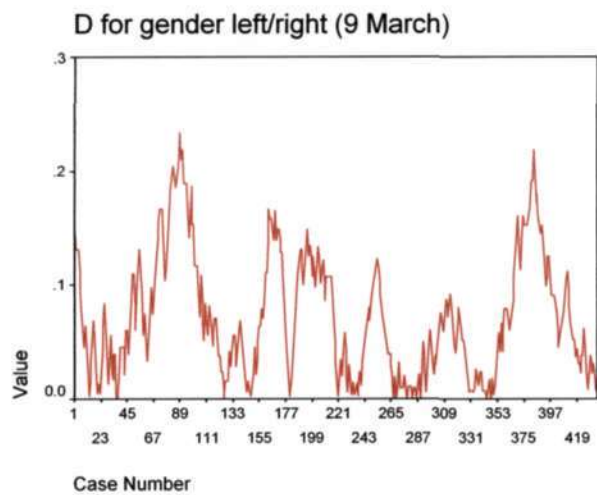
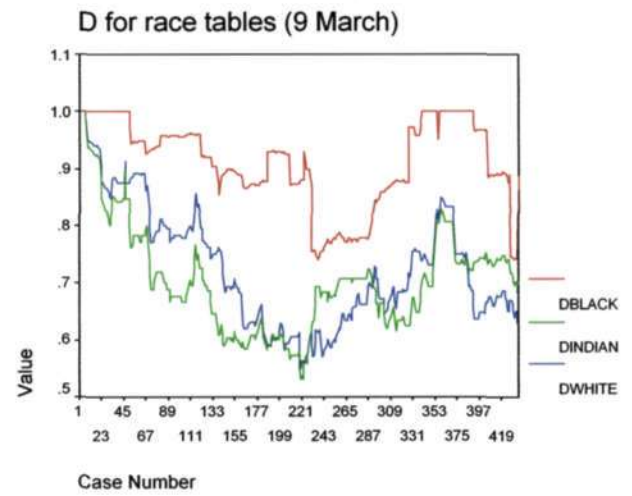
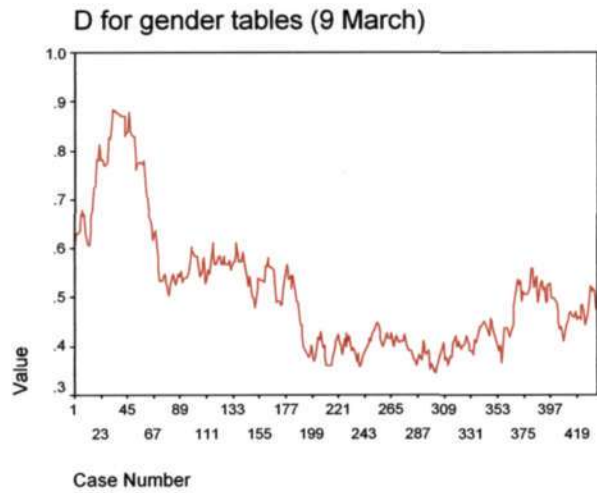
The graph for 19 tables per race begins with unevenness between the three racial groups. However, as time passes the graph depicts points of integration between the three racial groups (see case numbers 89, 243-265). The graph for both genders for the 19 tables suggests moderate levels of segregation within the social space.

The graph depicting the racial composition of the 'left and right' hand sides of the Cafeteria indicates 'D' fluctuations. The graph begins by displaying black students as highly segregated within the social space. This could be due to a low proportion of black students presented at the Cafeteria. The scatter in racial proportions also suggests that more black students would be needed to bring about a degree of evenness in the room. There is a dynamic shift at case number '177' that presents white students as the racial group that is highly segregated. This pattern persisted for the remainder of the day. The graph for gender left/right hand sides begins with both genders integrated but with a significant change towards segregation. This phenomenon could be explained by a fluid change in the proportion of students in the social space (see case number 265-419).

The graph depicting the total number of students presented in the room shows Indian students once again constituting the majority in comparison to other racial groups. The graph also displays an uneven distribution of the three racial groups within the total social space of the Cafeteria.

The result of the 'summen-sumwom' graph shows consistency with information obtained from previous graphs that female students are most in proportion in comparison to males. The three racial groups are represented at the Hexagon Cafeteria with Indian students in the majority. Black students comprise the lowest proportion as found in previous observations. White students appear to have maintained proportions similar to previous day's observation.

4.3.5 Figure 4.5: Graphs-9 March 2004



Interpretation

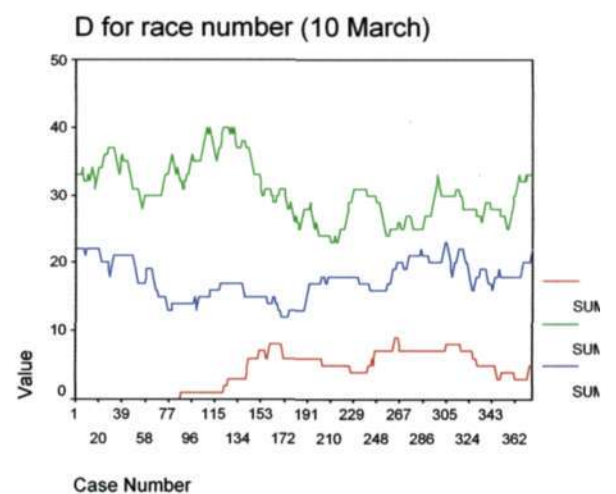
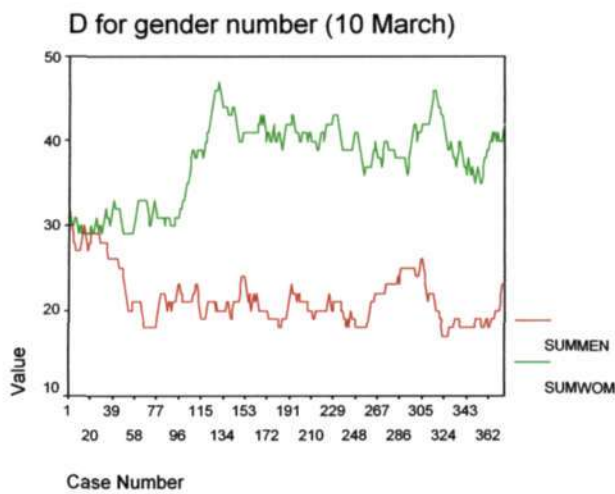
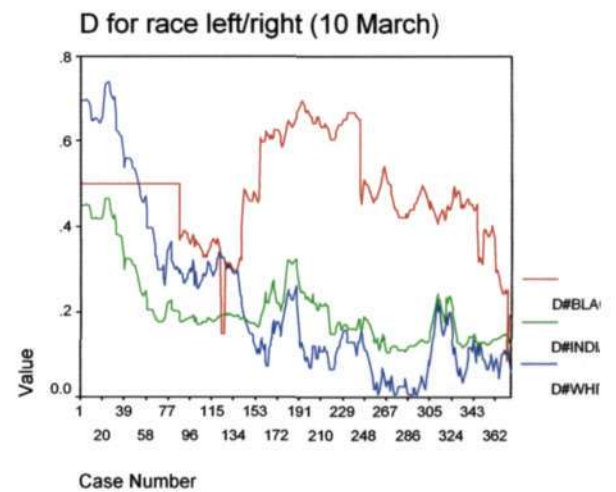
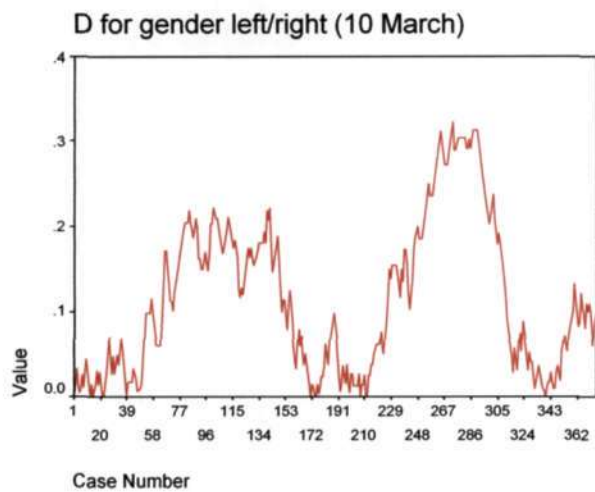
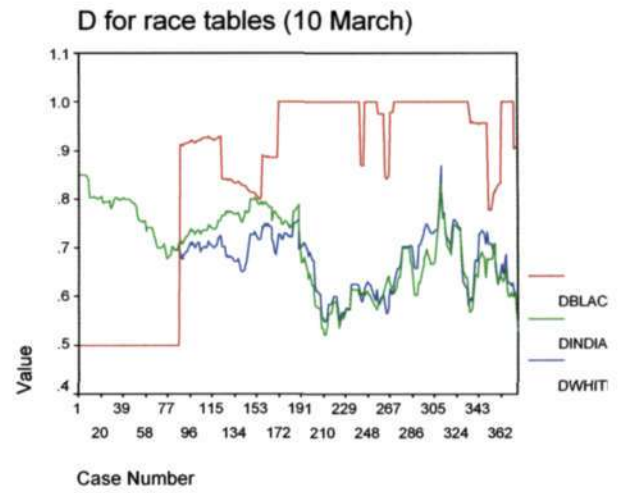
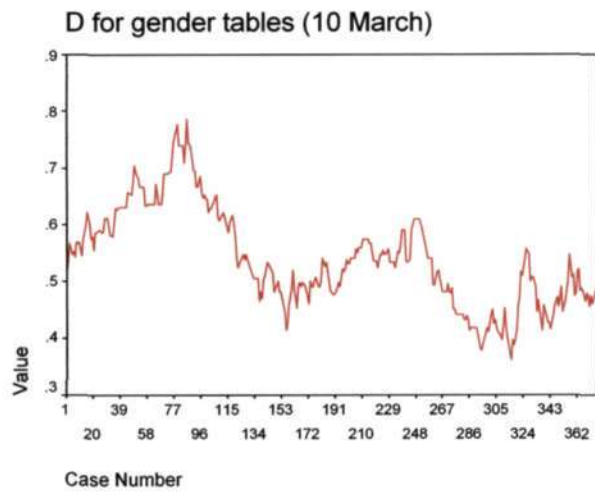
On this day 373 students were observed at the Hexagon Cafeteria. The racial proportion of students observed is as follows: 103 males; 270 females; 38 black; 119 white and 216 Indian students.

As displayed in the graph for the 19 tables, the 'D' value for the three racial groups suggests high levels of segregation at the beginning of the observation. As the day progressed, Indian and white students displayed integration, whilst black students remained highly segregated. The low proportion of blacks observed on this day may offer some explanation for this result.

The graph depicting the racial composition of the left and right hand sides of the cafeteria indicates 'D' changes. Black students are depicted as the racial group totally isolated in the total space, thus indicating racial segregation from other groups. The races are spread unevenly at the beginning until there is some movement around case number '177-199'.

It is interesting to note that Indian students still constitute the majority racial group at the Hexagon Cafeteria. The graph further shows that the proportion of black students in comparison to other racial groups decreases dramatically as the day progresses (see graph of sumB, sumI and sumW). The graphs displaying ratio of male to female students at the Cafeteria do not denote any changes from previous graphs with regard to total numbers, sexes by left/right and by tables.

4.3.6 Figure 4.6: Graphs-10 March 2004



Interpretation

Figure 4.6 (above) displays a graphical representation of data collected on the second week, final day of observations. The total number of students observed on this day was 346. This observation sample consists of 134 males; 212 females; 46 blacks; 95 whites and 205 Indians.

The graph for the 19 tables per race shows that no black students were initially present in the room as indicated by the 'D' value of 0.5. As the day progressed, the graph displayed black students as racially segregated from the other races, a similar result observed in previous graphical depictions. White and Indian students on the other hand progressed towards integration. This phenomenon did not change throughout the day.

The graph depicting the racial composition of the left and right hand sides of the cafeteria begins with an uneven distribution of the three racial groups. The graph goes on to depict a point of integration between the three races (see case number 134). There are however several points of integration between white and Indian racial groups (see case numbers 191,229,305-324,343). The observational period ended with all of the racial groups closely integrated. The graph for gender left/right shows more instances of integration compared to a single high level of segregation.

The graph for the total number of students in the Cafeteria displays proportional differences between the three racial groups with Indian students being the majority. This phenomenon has been observed throughout the six days of observations. The graphs for

both genders seem to confirm what has been previously observed, an uneven distribution.

4.4 Discussion

This study was intended to find answers to the following question:

Did the observed sample of students utilize social space at the Hexagon Cafeteria, as an indication of racial segregation?

The study reveals the following concerning the above question:

The students at the University of KwaZulu-Natal, Pietermaritzburg were observed on the following days: 17, 18, 24, 25 February 2004 and 9 and 10 March 2004. The present study attempted to describe the use of space by students from different racial groups at the Hexagon Cafeteria. It is thought that the decision to share space (contact) with someone from a different racial group or not to is informed by one's attitude towards the other.

The study revealed that the observed sample provided an indication of racial segregation by the way in which students utilized social space at the Hexagon Cafeteria. For assessing the aims of this study the results of the different observational days will be compared and discussed.

4.4.1 Observation-segregation

It was found on the first day of observation that black students were relatively isolated from other racial groups. This is evidenced by the graphical representation over most of

the observational period. There was evidence from the graphs that female students constituted the majority gender at the Cafeteria. Both genders on various days were equally distributed throughout the total social space of the Hexagon Cafeteria.

On 18 February 2004 there was initial segregation that progressed towards integration at the end of the day between the three racial groups. There was a shift from the previous days' findings, as on this day white students appeared to be the isolated group whilst black and Indian students were evenly distributed on both sides of the Cafeteria. However, total integration did take place between the three racial groups towards the end of the observational period. There was a high proportion of female to male students with both genders being equally distributed throughout the Hexagon Cafeteria.

The third day of observation showed that black students were remotely segregated for most part of the day in comparison to the other racial groups. There was initial integration observed between white and Indian students, which eventually changed to segregation between these two racial groups. This result is however not consistent with the findings of the first day of observation. Indian students still appear to be the majority in comparison to other racial groups. Both genders were unevenly distributed throughout the total social space of the Cafeteria, but once again female students outnumbered male students at the Cafeteria, a result consistent with previous observations thus far. The day ended with the three racial groups integrating with one another. The result of this finding is in accordance with the previous day.

On 25 February 2004 black students were initially presented as being highly segregated, however, as time passed white students then became highly segregated. During the course of the observational period there were points of integration between the three racial groups. Indian students, once again, constituted the majority of students at the Hexagon Cafeteria. There was also a difference in total numbers per gender, as female students outnumbered males.

The information gathered on 9 March 2004 showed that black students were unevenly distributed throughout the cafeteria. As the day progressed white and Indian students displayed integration whilst black students remained highly segregated. Indian students dominated the Cafeteria in large numbers. Female students were the gender group that was in the majority.

The final day of observation indicated that black students appeared segregated as the day progressed. White and Indian students moved towards integration. However, there was a point of integration between the three racial groups. The observational period ended with the three racial groups closely integrated. Indian students were the majority at the Cafeteria and female students once again constituted a high proportion in comparison to male students.

The above observation results seem to concur with apartheid related spatial identities of groups and individuals. Since enforced by apartheid each race had its own space residentially, personally and on the whole socially (Group Areas Act). Herewith the idea

of spatial identity is reinforced not only in the way that students operate within the social space but also by reflecting the racial identity of their different groups. This study reveals the pervasive nature of the past as played out in the Hexagon Cafeteria.

4.4.2 Fluctuations: Time across different graphs

The profound influence of time on spatial density, as this study within the context of the Hexagon Cafeteria has observed, inspires curiosity about how it operates and influences other personal and informal spaces. As depicted in the various graphs, the fluid changes occurring within the social space appear to closely correlate with time lapse. Most students appeared to converge on the Cafeteria after the first tea break (10.30am) influencing the racial dynamics or unevenness in the Cafeteria.

It was noticed that the 'D' value for unevenness in the social space fluctuated significantly with time across different days. Most of the fluctuations displayed black students as the least represented racial group in the Hexagon Cafeteria. Time appeared to be significant with regard to variations across the different graphs. Some notable changes between the races occurred with the passing of time despite low racial proportions. Significant times for change appeared around 11.30am-12.30pm as most students either entered or left the Hexagon Cafeteria.

The fluctuations tend to correlate with an ever-increasing proportion of Indian students per observation day. It is interesting, though; those Indian students seemed to spend more time in the Cafeteria compared to other races. It also seems that the different races derive

maximum use the Cafeteria at different times of the day. The graphs for both genders also displayed significant fluctuations across time. Such fluctuations appeared to persist throughout the entire study. Female students were observed to constitute the majority over time across the six observation days.

The graphs show that towards the end of each observation day, although some form of integration is indicated, Indian students dominate the social space. Dixon and Durrheim (2003) in their study of the beaches revealed that time was influential in how white and black groups utilized the social space on the Scottburgh beachfront.

4.4.3 Fluctuations: 'D' values

It was also interesting to note that the 'D' values ranged between 0.5 and 1 for the different races per 19 tables. As displayed in various graphs and in relation to the formula, a value of 0.5 translates to there being no representation of a particular racial group in the social space. This result was observed only on the final day of observation (10 March 2004), meaning that there were no black students present in the Cafeteria at the beginning of the observation. It was also observed that on some days, the 'D' values would fluctuate significantly denoting levels of segregation. However segregation for race was high by tables, and black isolation by left/right sides at the Hexagon Cafeteria. This phenomenon was observed on the third day of observation; the fluctuations were 0.4, 0.6 and 0.1 (race left/right) for white, black and Indian students respectively. There were also high gender levels of segregation across tables than left/right sides (0.9 and 0.6 respectively) for some of the days.

4.4.4 Fluctuations: Left/right sides

Fluctuations with regard to both sides of the Cafeteria indicate that both genders were unevenly distributed in the social space over the observation period. It was also observed that the total number of students in the Cafeteria favoured female than male students. This result was consistent throughout the observation period. However, fluctuations with regard to total numbers across the social space revealed that Indian students always outnumbered both black and white students. The graphs have depicted significantly the dynamic shifts in racial proportions of students within the social space. The graphs for the three races during most parts of the observational period began with total segregation. This resulted in dynamic fluctuations as the racial proportion within the Cafeteria changed. There were also high gender levels of segregation across tables than left/right sides. Fluctuations were noted across time, tables, and both sides of the cafeteria as well as total numbers on all observational days.

4.5 Conclusion

It is the contention in this study that black students were mostly isolated or remotely segregated in comparison to the other racial groups. This result was noted on the following observational days of 17 February, 24 February, 9 March and 10 March 2004. This contention may be explained in the light that black students were presented in very small proportions in comparison to the other racial groups. It is speculated that if this study had a higher proportion of black students the study would have yielded different results. White students were also found to be isolated as presented graphically on 18 February 2004. The graph on 25 February 2004 displayed interesting results that black

students were initially segregated but as time passed white students then became the segregated racial group.

The study has also shown that white and Indian students tended to integrate with each other as indicated on observational days of 17 February, 9 March and 10 March 2004. The high proportion of white and Indian students presented in this study could explain the results. A somewhat different result was yielded on 24 February 2004, with initial integration between white and Indian students that changed to segregation as time passed.

Throughout the entire observational period both genders were found to be unequally distributed within the total social space of the Hexagon Cafeteria. Female students throughout this study outnumbered male students, leading the researcher to speculate that the Hexagon Cafeteria may be the ideal social space for most female students.

Different days yielded different results as on some days black students were presented as isolated and on other days white students were presented as isolated. Integration and segregation on different observational days also fluctuated between the different racial groups. However, the graphs definitely depicted that on four days of observation (18 February, 24 February, 25 February and 10 March 2004) integration did take place between the three racial groups. Most of this integration took place during the course and end of the day, giving students from different racial groups sufficient time to interact with one another.

CHAPTER FIVE

5. SUMMARY, RECOMMENDATIONS AND LIMITATIONS

5.1 Summary

5.1.1 The problem

The studies mentioned thus far do not describe the use of space by students in a South African University. South African universities are constantly confronted with racial related difficulties despite legislative changes even in academia. The present study attempts to describe the observed use of space by students from different racial groups. The decision to share space (contact) with someone from a different racial group or not to is informed by one's attitude towards the other. It is the focus of this study to explore and describe this phenomenon as observed in the cafeteria, of the University of KwaZulu-Natal, Pietermaritzburg.

5.1.2 The aim of the study

To describe how the observed sample of students utilizes social space at the Hexagon Cafeteria as an indication of racial segregation.

5.1.3 Methodology

Chapter 1 consisted of motivation for investigation in this field, while Chapter 2 comprised of a review of previous work done in this area in South Africa and other countries. Chapter 3 detailed the method of study used in this research. Chapter 4 contained the analysis of data and in Chapter 5, a summary and recommendations were made.

5.1.4 Findings

This study revealed the following:

In this study black students were found to be mostly segregated in comparison to the other racial groups. They were in the minority in comparison to other racial groups throughout the six-day observational period. It was not expected that the sample would consist of a greater proportion of Indian students and a low proportion of black students. Perhaps this study would have yielded different results if there were a higher proportion of blacks presented in this study. It could be speculated that the Hexagon Cafeteria is not a social meeting place for the majority of black students, hence the reason a low proportion of black students presented in this study. The Hexagon Cafeteria could be a popular meeting place for most Indian students hence the reason for them having the highest proportion during the six-day observational period.

Both genders were unequally distributed throughout the total social space of the Hexagon Cafeteria. Significant differences in numbers are observed between female and male students at the Cafeteria. There is evidence in this study showing that females were presented as outnumbering male students throughout the six-day observational period. In the present study, the researcher did not anticipate a greater number of female students over male students at the Hexagon Cafeteria. It could be speculated that the high proportion of female students at the Hexagon Cafeteria could be due to the Cafeteria being an ideal place for female students to meet.

Different observational days yielded different results. Points of integration and segregation were indicated graphically throughout the observational period. Despite significant degrees of isolation between the racial groups, the study however showed that there were points of contact between the three racial groups on four observational days. This was an optimistic finding, which indicates that students of the University of KwaZulu-Natal, Pietermaritzburg do to some degree integrate with students of different racial groups at the Hexagon Cafeteria.

The findings of this study do support the observation that students of different racial groups at the Hexagon Cafeteria move slowly but progressively towards each other, which was indicated by integration between the three racial groups only taking place towards the end of each day of observation. This finding was also positive in the sense that there is a sense of integration between the three racial groups despite it being a slow process.

The results of this study correspond with some of the findings in the study by Smith, Stones and Naidoo (2003), who found that there was only a small change in tolerance between different racial groups on the university. These authors feel that more social changes need to occur if a truly "rainbow nation" in South Africa is to be realized.

Other researchers (Amir, 1969; Maoz, 2002; Dixon & Durrheim, 2003; Campbell, Kruskal & Wallace, 1966, Seidman, 1999) posit that people's attitudes prevent actual contact between the diverse races in social settings. Another study by Hook and Vrodljak

(2002) suggests that racial segregation is characterized by new segregation tendencies, commonly known as 'gated communities'. These tendencies are at the core of the effects of unequal status between the different racial groups. Christopher (2001) describes post-apartheid South Africa as comprised of a society 'living together apart', a notion supported by the above-mentioned studies.

In terms of social space, black students in this study were found as segregated in comparison to other racial groups. It is thought that the decision to share space (contact) with someone from a different racial group or not to is informed by one's attitude towards the other. An attitude is a tendency to react positively or negatively to certain persons, objects and situations (Morgan, 1961). It can be speculated that students from the other racial groups displayed negative attitudes towards black students hence them being highly segregated in the total social space.

Literature on attitudes and prejudice has shown that attitudes are emotionally toned tendencies that are learned through conditioning and generalization (Morgan, 1961). A particular culture in which a person develops shapes their attitude. In this respect racial discrimination and prejudice is learnt through communication with other people and it continues to play a very important developmental role throughout a child's life. Learning of racial discrimination can also take place through observation and imitation of other people. Parents are regarded as important socialization agents in a child's life. Other important agents of socialization are the schools, church and playmates. McConahay

(1986) indicates that racial attitudes that are ingrained during socialization are most resistant to change.

Gordon Allport (1954) indicates that unequal status between the different racial groups could account for the continued prejudice and discrimination. According to Allport's theory, when two groups of equal status have contact with each other, prejudice decreases; however, if status inequality exists and one group is dominant over the other, prejudice remains the same or actually increases (Allport, 1954). This phenomena has been has been observed in the South of today, a decrease in prejudice has been noted; at the same time, southern blacks have risen in the stratification system and, with the elimination of the "separate but equal" public facilities, blacks and whites of the same social class are brought closer together (Perry & Perry, 1991).

Another explanation for continued prejudice and discrimination despite South Africa being 10 years into democracy is the theory by Adorno (1950, cited in Perry & Perry, 1991). This theory indicates that people with an authoritarian personality are socialized to accept only the norms and values of their own group, rejecting all others. They become very anxious when confronted with different norms and values and convince themselves that people who differ from them are somehow inferior, subhuman, or sinful. In such persons, prejudice is merely part of a total outlook on life in which situations and problems are perceived in terms of absolutes-good or bad, right or wrong-and in which people are either heroes or villains (Perry & Perry, 1991).

It is thought that with increasing the opportunity for contact between the prejudiced and those who experience prejudice it would provide people with more information about others, thus breaking down stereotypes and reducing generalization about the members of out group. However research has shown that it is not enough to bring people together (Woods, 1995). The classroom environment could be another reason for the failure to reduce prejudice and discrimination by mixing black and white. This environment could consist of competitive students resulting in differences between groups being exaggerated, leading to hostile relationships between groups (Woods, 1995).

Based on the above research it can be concluded that it could take some time for people to change their racial attitudes and stereotypes towards others. But like Smith, Stones and Naidoo (2003) the researcher is likewise optimistic that racial changes would take place in South Africa.

5.2 Limitations of the study

(a) Some of the limitations of the study pertain to methodology. Although the 'D' index of Dissimilarity has been used in previous research to describe what was happening in space, it does not tap into the underlying factors that might be contributing to racial segregation.

(b) This study concerned itself with describing what was happening in space but not tolerance of or prejudice toward other groups. Moreover, given South Africa's racial

diversity and its complex history of interactions between different racial groups, it might be more informative to address attitudes towards other specific groups as well.

(c) Only one social space was considered by the present study, thus limiting the ability to generalize the findings.

(d) This study targeted a specific age cohort (University students) therefore the results cannot be assumed to represent South Africans from different age groups. However, interpretation of the practical significance of the differences found is clearly a matter of individual judgment and perspective.

(e) The sample chosen for this study was somewhat biased as the study only consisted of those subjects who were presented at the Hexagon Cafeteria on the six days of observation.

(f) The researcher was unable to obtain a sample from other Cafeteria's at the University because of time and financial constraints. Thus the scope of the study only took place at one Cafeteria at the University.

(g) There were very few black students presented in this study in comparison to other racial groups.

Despite the limitations mentioned above, the current study does provide insight as to how students at the University of KwaZulu-Natal, Pietermaritzburg utilize social space as an indication of student's segregation towards other racial groups at the Hexagon Cafeteria. The writer chose a researchable topic and a study that attempts to fill the gaps in the existing literature.

5.3 Recommendations

This study has opened the following avenues for future research:

- (a) Literature in the field of University students' attitudes towards other racial groups, indicated through the use of social space.
- (b) A study should be conducted investigating the interaction of social and cultural variables impacting on contact.
- (c) The scope of the problem concentrated on only one Cafeteria on the University of KwaZulu-Natal, Pietermaritzburg. There is, however, a need to extend the area of scope to other social spaces in the University. A comparative study on how students utilize social space on different Cafeterias on the University would be useful.

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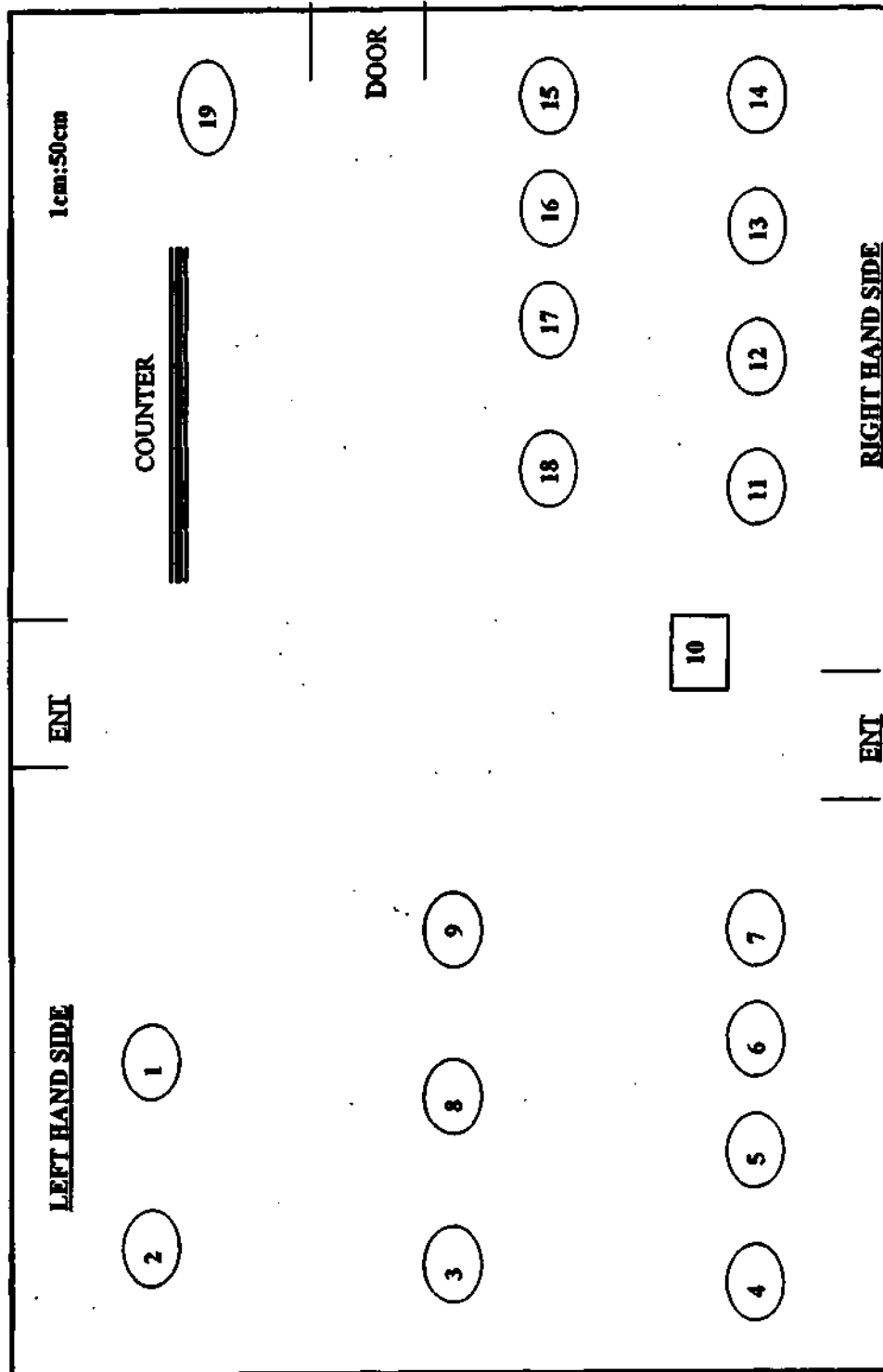
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APPENDIX A

Hexagon Cafeteria: Floorplan



APPENDIX B

Syntax for calculating the 'D' statistic (steps)

COMPUTE 'LEAVE' AS +1 FOR THE FIRST HALF, -1 FOR THE SECOND HALF OF THE DOUBLE-LENGTH DATA.

PUT IN AN EXTRA, FIRST, CASE, FOR THE BASELINE FIGURES.
PUT IN A COLUMN 'seq' JUST THE SEQUENCE OF OBSERVATIONS.

THIS SETS UP 3x19=57 COLUMNS OF ZEROS FOR THE 19 TABLES,
FOR BLACKS, INDIANS, WHITES.

```
do repeat x=b1 to b19.  
  compute x=0.  
end repeat.  
do repeat y=i1 to i19.  
  compute y=0.  
end repeat.  
do repeat z=w1 to w19.  
  compute z=0.  
end repeat.  
formats b1 to w19 (f4.0).  
execute.
```

THIS SETS UP 2X19 COLUMNS OF ZEROS FOR THE TWO SEXES
AT THE 19 TABLES.

```
do repeat x=m1 to m19.  
  compute x=0.  
end repeat.  
do repeat y=f1 to f19.  
  compute y=0.  
end repeat.  
formats m1 to f19 (f4.0).  
execute.
```

NOW FILL IN THE BASELINE FIGURES

NOTE THE 'VECTOR' COMMANDS. RECALL THAT 'leave' IS
+1 FOR AN ARRIVAL AND -1 FOR A DEPARTURE.

THIS ADDS +1 TO ONE OF THE 3x19=57 TABLE SLOTS IF
A PERSON ARRIVED BUT
SUBTRACTS 1 IF A PERSON LEFT THAT TABLE.

```
vector b=b1 to b19.  
do if (race=2).  
  compute b(table)=b(table)+leave.  
end if.  
vector w=w1 to w19.  
do if (race=1).  
  compute w(table)=w(table)+leave.  
end if.  
vector i=i1 to i19.  
do if (race=4).  
  compute i(table)=i(table)+leave.  
end if.  
execute.
```

THE ABOVE SEQUENCE SET OUT FOR SEXES

```
vector m=m1 to m19.  
do if (gender=1).  
  compute m(table)=m(table)+leave.  
end if.  
vector f=f1 to f19.  
do if (gender=2).  
  compute f(table)=f(table)+leave.  
end if.  
execute.
```

SUM TOGETHER THE LEFT- AND RIGHT-HAND TABLES!
DO THIS ONLY FOR THE LEFT/RIGHT VERSION.

```
compute rightw=w1+w2+w3+w4+w5+w6+w7+w8+w9.  
compute leftw=w11+w12+w13+w14+w15+w16+w17+w18+w19.  
compute righti=i1+i2+i3+i4+i5+i6+i7+i8+i9.  
compute lefti=i11+i12+i13+i14+i15+i16+i17+i18+i19.  
compute rightb=b1+b2+b3+b4+b5+b6+b7+b8+b9.  
compute leftb=b11+b12+b13+b14+b15+b16+b17+b18+b19.  
execute.
```

THIS IS THE ABOVE BIT, FOR TWO SEXES.

```
compute rightmen=m1+m2+m3+m4+m5+m6+m7+m8+m9.  
compute leftmen=m11+m12+m13+m14+m15+m16+m17+m18+m19.  
compute rightwom=f1+f2+f3+f4+f5+f6+f7+f8+f9.  
compute leftwom=f11+f12+f13+f14+f15+f16+f17+f18+f19.  
formats m1 to f19(f4.0).  
execute.
```

THIS CREATES A COPY OF THE 3x19=57 TABLES

```
do repeat x=b1 to b19/y=b#1 to b#19.  
  compute y=x.  
end repeat.  
do repeat x=i1 to i19/y=i#1 to i#19.  
  compute y=x.  
end repeat.  
do repeat x=w1 to w19/y=w#1 to w#19.  
  compute y=x.  
end repeat.  
formats b#1 to b#19 i#1 to i#19 w#1 to w#19 (f4.0).  
execute.
```

THIS CREATES A COPY OF THE 2X19 TABLES FOR
THE SEXES ANALYSIS.

```
do repeat x=m1 to m19/y=m#1 to m#19.  
  compute y=x.  
end repeat.  
do repeat x=f1 to f19/y=f#1 to f#19.  
  compute y=x.  
end repeat.  
formats m#1 to m#19 f#1 to f#19(f4.0).  
execute.
```

COPY THE 3x2 COLUMNS FOR THE LEFT/RIGHT VERSION.

```
compute b_r=rightb.  
compute b_l=leftb.  
compute i_r=righti.  
compute i_l=lefti.  
compute w_r=rightw.  
compute w_l=leftw.  
execute.
```

COPY THE 2 SEXES x 2 SIDES, FOR THE SEX/SIDES VERSION

```
compute men_r=rightmen.  
compute men_l=leftmen.  
compute wom_r=rightwom.  
compute wom_l=leftwom.  
execute.
```

THIS KEEPS A RUNNING TALLY OF HOW MANY, IN TOTAL, OF
THE THREE RACES, ARE SITTING AT EACH OF THE 19 TABLES.

```
do if (seq ge 2).  
  do repeat x=b#1 to w#19.  
  compute x=x+lag(x,1).  
end repeat.
```

end if.
execute.

RUN FREQUENCIES ON B#1 TO W#19.

THIS IS THE ABOVE SECTION FOR THE SEXES VERSION

do if (seq ge 2).
do repeat x=m#1 to f#19.
compute x=x+lag(x,1).
end repeat.
end if.
execute.

SEXES VERSION:

RUN FREQUENCIES ON M#1 TO F#19.

THIS KEEPS THE RUNNING TALLY, WITH THE LAG COMMAND,
HERE ONLY FOR THE LEFT/RIGHT VERSION.

do if (seq gt 1).
compute b_r=rightb+lag(b_r,1).
compute b_l=leftb+lag(b_l,1).
compute i_r=righti+lag(i_r,1).
compute i_l=lefti+lag(i_l,1).
compute w_r=rightw+lag(w_r,1).
compute w_l=leftw+lag(w_l,1).
end if.
execute.

RUN FREQUENCIES ON B_R TO W_L.

THIS IS THE ABOVE SECTION, FOR THE SEXES VERSION

do if (seq gt 1).
compute men_r=men_r+lag(men_r,1).
compute men_l=men_l+lag(men_l,1).

```

compute wom_r=wom_r+lag(wom_r,1).
compute wom_l=wom_l+lag(wom_l,1).
end if.
execute.

```

RUN FREQUENCIES ON MEN_R TO WOM_L.

COMPUTE THE THREE SUMS: THIS IS HOW MANY, IN TOTAL, OF EACH RACE, ARE IN THE HEXAGON, AND AT ALL OF THE TABLES ADDED.

```

compute sumb=b#1+b#2+b#3+b#4+b#5+b#6+b#7+b#8+b#9+b#10+b#11+
b#12+b#13+b#14+b#15+b#16+b#17+b#18+b#19.
compute sumi=i#1+i#2+i#3+i#4+i#5+i#6+i#7+i#8+i#9+i#10+i#11+i#12+i#13+
i#14+i#15+i#16+i#17+i#18+i#19.
compute sumw=w#1+w#2+w#3+w#4+w#5+w#6+w#7+w#8+w#9+w#10+
w#11+w#12+w#13+w#14+w#15+w#16+w#17+w#18+w#19.
execute.

```

COPY THE SUMMING, FOR THE LEFT/RIGHT VERSION. THEN COMPUTE ANOTHER SIX BLANK COLUMNS.

```

compute sumb2=b_r+b_l.
compute sumi2=i_r+i_l.
compute sumw2=w_r+w_l.
compute br=0.
compute bl=0.
compute ir=0.
compute il=0.
compute wr=0.
compute wl=0.
execute.

```

REWORK THE ABOVE SECTION, FOR THE SEXES ANALYSIS

```

compute summen=men_r+men_l.
compute sumwom=wom_r+wom_l.
compute men#r=0.

```



```

compute men#l=0.
compute wom#r=0.
compute wom#l=0.
execute.

```

THIS CREATES (YET!) ANOTHER 3X19=57 COLUMNS, OF ZEROS

```

do repeat x=x1 to x19.
compute x=0.
end repeat.
do repeat y=y1 to y19.
compute y=0.
end repeat.
do repeat z=z1 to z19.
compute z=0.
end repeat.
FORMATS X1 TO Z19 (f5.2).
execute.

```

THIS CREATES ANOTHER 2X29=58 COLUMNS, FOR THE
SEXES BY 19 TABLES ANALYSIS

```

do repeat x=x1 to x19.
compute x=0.
end repeat.
do repeat y=y1 to y19.
compute y=0.
end repeat.
formats x1 to y19(f6.2).
execute.

```

FINALLY, CALCULATE THE D-VALUES PER RACE PER TABLE,
PER ARRIVAL OR DEPARTURE

```

do repeat b=b#1 to b#19/i=i#1 to i#19/w=w#1 to w#19
/x=x1 to x19/y=y1 to y19/z=z1 to z19.
compute x=abs(b/(sumb+.0001)-(i+w)/(sumi+sumw+.0001)).

```

```

compute y=abs(i/(sumi+.0001) - (b+w)/(sumb+sumw+.0001)).
compute z=abs(w/(sumw+.0001) - (b+i)/(sumb+sumi+.0001)).
end repeat.
compute dblack=.5*(x1+x2+x3+x4+x5+x6+x7+x8+x9+x10+x11+
x12+x13+x14+x15+x16+x17+x18+x19).
compute dindian=.5*(y1+y2+y3+y4+y5+y6+y7+y8+y9+y10+y11+
y12+y13+y14+y15+y16+y17+y18+y19).
compute dwhite=.5*(z1+z2+z3+z4+z5+z6+z7+z8+z9+z10+z11+
z12+z13+z14+z15+z16+z17+z18+z19).
execute.

```

REWORK THE ABOVE, FOR THE SEX x TABLES ANALYSIS

```

do repeat m=m#1 to m#19/f=f#1 to f#19
/x=x1 to x19/y=y1 to y19.
compute x=abs(m/(summen+.0001)-f/(sumwom+.0001)).
compute y=abs(f/(sumwom+.0001) - m/(summen+.0001)).
end repeat.
compute dmen=.5*(x1+x2+x3+x4+x5+x6+x7+x8+x9+x10+x11+
x12+x13+x14+x15+x16+x17+x18+x19).
compute dwomen=.5*(y1+y2+y3+y4+y5+y6+y7+y8+y9+y10+y11+
y12+y13+y14+y15+y16+y17+y18+y19).
execute.

```

COPY THE ABOVE, NOW ONLY BASED ON LEFT & RIGHT.

```

compute br=abs(b_r/(sumb+.0001)-(i_r+w_r)/(sumi+sumw+.0001)).
compute bl=abs(b_l/(sumb+.0001)-(i_l+w_l)/(sumi+sumw+.0001)).
compute ir=abs(i_r/(sumi+.0001)-(b_r+w_r)/(sumb+sumw+.0001)).
compute il=abs(i_l/(sumi+.0001)-(b_l+w_l)/(sumi+sumw+.0001)).
compute wr=abs(w_r/(sumw+.0001)-(i_r+b_r)/(sumi+sumb+.0001)).
compute wl=abs(w_l/(sumw+.0001)-(i_l+b_l)/(sumi+sumb+.0001)).
compute d#black=.5*(br+bl).
compute d#indian=.5*(ir+il).
compute d#white=.5*(wr+wl).
execute.

```

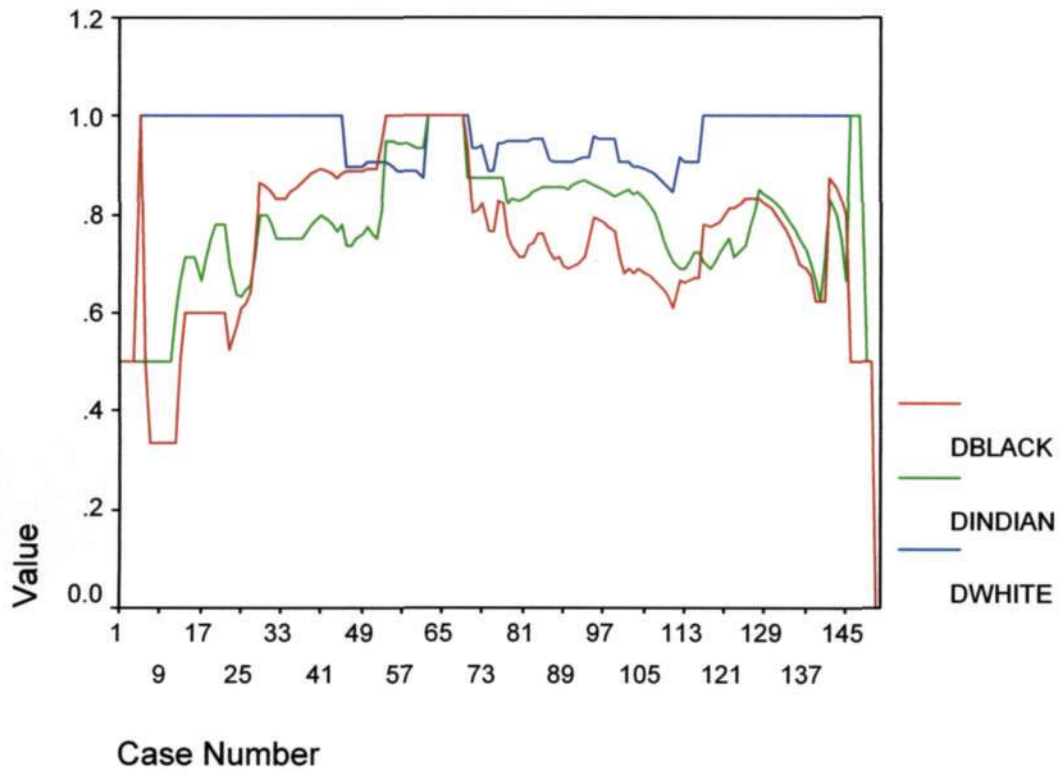
REWORK THE ABOVE, NOW FOR THE SEXES VERSION

```
compute men#r=abs(men_r/(summen+.0001)-(wom_r)/(sumwom+.0001)).
compute men#l=abs(men_l/(summen+.0001)-(wom_l)/(sumwom+.0001)).
compute wom#r=abs(wom_r/(sumwom+.0001)-(men_r)/(summen+.0001)).
compute wom#l=abs(wom_l/(sumwom+.0001)-(men_l)/(summen+.0001)).
compute d#men=.5*(men#r+men#l).
compute d#women=.5*(wom#r+wom#l).
execute.
```

APPENDIX C

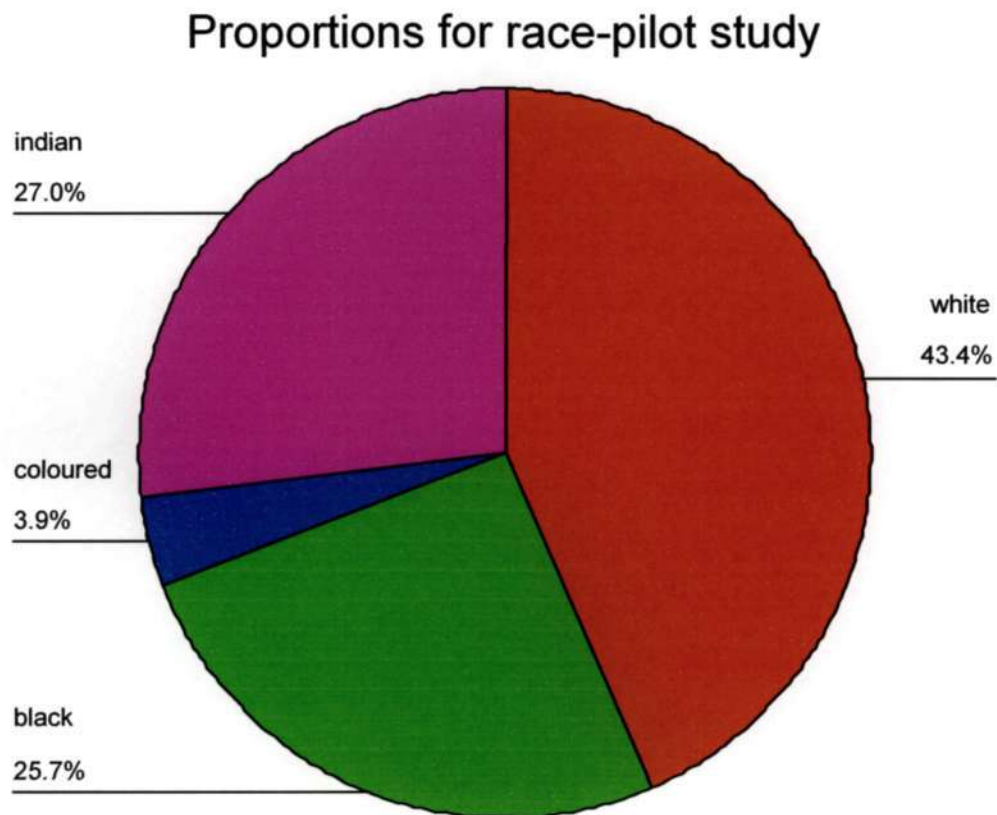
Graph for 'D' race-Pilot study

Graph for Pilot study-Vac (Race)



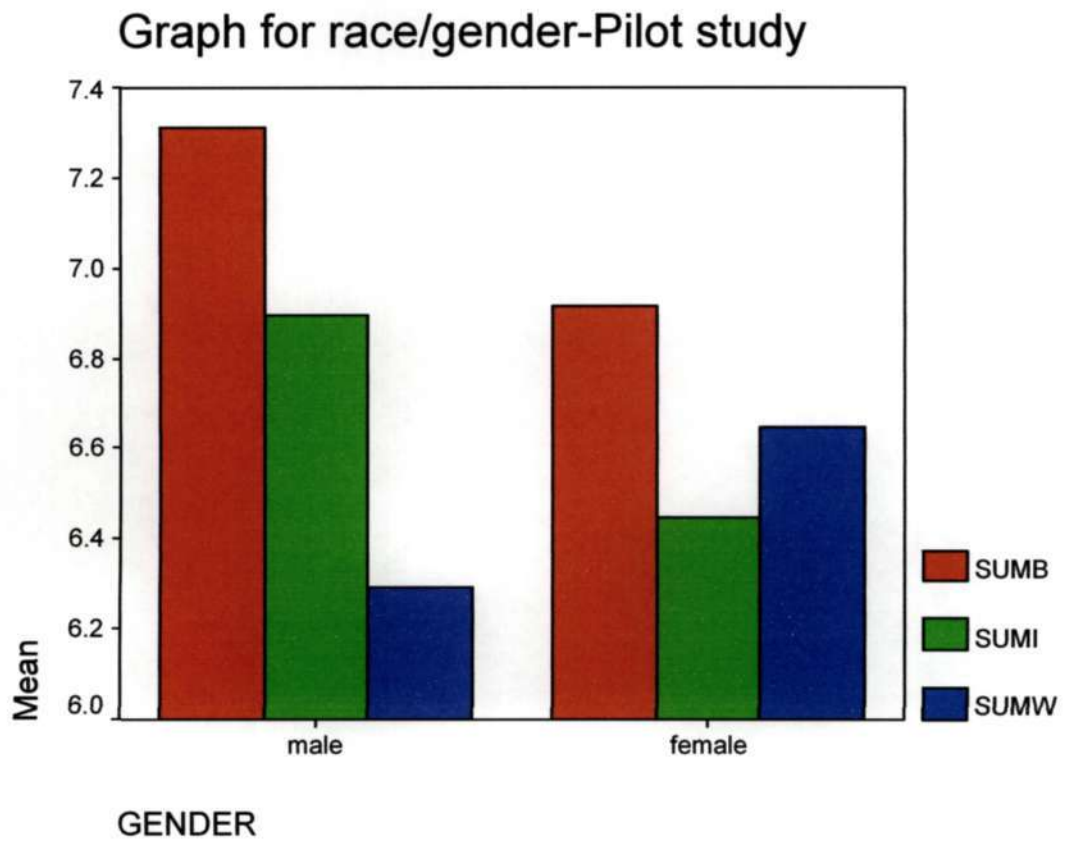
APPENDIX D

(1) Graph for proportions per race



APPENDIX D

(2) Graph for mean sum male/female



APPENDIX E

Pictures: Hexagon Cafeteria



