USE OF THESES

This copy is supplied for purposes of private study and research only. Passages from the thesis may not be copied or closely paraphrased without the written consent of the author.
Dear Penny,

At last your very own copy!

You have served as an excellent role model throughout this endeavour and beyond.

I thank you for your inspiration and effort.

Warmest regards,

Kate.
Comments on PhD thesis of Katherine J. Reynolds entitled: Beyond the information given: Capacity, context and the categorization process in impression formation

This was an excellent thesis which is without question worthy of being awarded a PhD. The work is admirable on a number of levels, both theoretically and empirically. I was particularly impressed with the theoretical insight and the knowledge and depth of understanding with respect to the relevant literature. The literature review was very detailed and took nothing for granted. The critical analysis of the previous literature, and of how it has often been presented or understood was almost worthy of a PhD in itself, in my view. I hope that this work is not wasted and can be used in some published form, as it would be a shame for such an insightul analysis not to reach a wider audience than the readers of this thesis. My worry is that such a lead up would form too much by way of introduction to the empirical papers when published. Indeed the review/theoretical chapters were so thorough and extensive, that I admit to a bit of impatience in having to wait to get to the empirical rewards waiting at the end as it were (but this is meant more by way of compliment than criticism).

The empirical chapters were well worth waiting for. I was already familiar with some of the data form conferences, but here together they form a very nice series of integrated studies, flowing logically from the theoretical critique and analysis. The data were generally strong and well interpreted and once again, I can find very little fault here. I detected what might be considered as one slight tendency to over-interpret however. On p. 260 (top) it is stated that "as predicted there was also a significant interaction between identity and dimension..." That is subjects rated themselves as most different from the target on dimensions inconsistent with the identity manipulation. I could not find this precise prediction in the preceding text (e.g. p.247). Rather, my understanding was for a more complex predicted interaction involving the intragroup (group) versus interpersonal manipulation. Indeed this is made explicit on the following page (261) when we find out that the pattern of differentiation in interpersonal conditions is consistent with predictions. This is basically the same interaction as the overall two way interaction including the intragroup condition described above (i.e. that is subjects rated themselves as most different from the target on dimensions inconsistent with the identity manipulation). This is fine, but as the pattern of means from table 9.2, and the absence of a reported significant 3-way interaction make clear, the interaction is basically the same (or not significantly different) in the intragroup condition and as I understand it, this was not predicted. In other words it seems that self-target differences were accentuated (on inconsistent dimensions) in both interpersonal and intragroup/group conditions, whereas this was only clearly predicted in interpersonal conditions (and in my view that is indeed what the theory would predict). Even if this pattern is still present for the intragroup conditions, surely we would expect it to be significantly less evident here than in the interpersonal conditions (resulting in a three-way interaction)? The fact that the (predicted?) three-way interaction is not mentioned, and that the two way interaction (excluding the interpersonal group factor) is described as predicted, rather glosses over this fact in my opinion. I think some attention to this point will be necessary before this research is published.

One additional minor point: In the final study I found the labelling of conditions as interpersonal versus intragroup slightly confusing, given that these terms are sometimes equated within SCT. I though simply referring to group versus interpersonal conditions might have been simpler and clearer in this regard.

Overall however I thought the data were very nice and formed the perfect complement to the theoretical critique and analysis. Indeed my brevity here should be taken as a general endorsement for the high quality of this work, and that little by way of criticism is warranted. I also thought the discussion chapter was excellent with very interesting
ideas for theoretical development and future directions of research. On top of all this the thesis was extremely clear and well written, with first class presentation and minimal typos or other minor errors. All in all then. I have absolutely no hesitation in recommending that the candidate be awarded PhD for what is a first class piece of work.

If it is of any help, I list a few minor typos that I picked up through the text below.

p.49, top. Shouldn't Neuberg & Fiske (1990) be Fiske & Neuberg? (or the date changed to 1987?).

p.60, last para. Delete comma after "Research, ..."?

p.100, 2nd para, 8th line: devises > devices?

p.157, 5 lines from bottom: a accentuation > an accentuation.

p.183, end 1st para: Why give p>.10 rather than p<x?

p.186, 4 lines from bottom: insert comma after manipulated?

p.232 top para: Is warm (also friendly?) not also stereotypic of the female stereotype?

p.285, 2nd para, 7th line: exit > exist.
Report of examiner: Dissertation of Katherine J. Reynolds

Beyond the information given: Capacity, context and the categorisation process in impression formation.

For almost two decades, social cognition has constituted one of the major theoretical references for the study of impression formation, person perception, and stereotyping. In this excellent piece of work, Kate Reynolds provides a critical analysis of the major assumptions underlying the social cognition research endeavours. She questions a view in which categorisation is seen as an unfortunate data reduction and information distortion process. Supposedly, perceivers would be forced to rely on such faulty processes whenever they lack the cognitive resources or the appropriate motivational set of mind. From the social cognition perspective, stereotypes and individuating perception, error and truth, are two ends of the same continuum. Kate Reynolds then convincingly sets the stage for an alternative approach in which categorisation would be at work in every aspect of perception. Building upon self-categorisation theory, Kate argues that there is no such thing as one true characterisation of others but that perception always entails a context-dependent accentuation of differences from a relevant target of comparison.

After a well-documented review of the early person perception research, she details the critical aspects of the debate opposing elemental and configural models of impression formation. I must say that I was very pleased to read some very interesting comments concerning Anderson’s sceptical reactions regarding the contemporary interpretation of his own early research. In Chapter 4, Kate endeavours to present in more detail the major assumption underlying the social cognition approach: people categorise when cognitive resources are scarce and when they are not motivated to be accurate. This chapter is, in my opinion, slightly weaker than the rest of the dissertation. A series of studies could have been included in the discussion. Also, it seems to me that the text does not provide a thorough analysis of the process of inconsistency resolution and the attributional work that sets on upon encounter of unexpected evidence. If I were to advise some development of the current text, I would definitely suggest Kate to enrich the discussion by integrating this important facet of social cognition work. In fact, this is a potentially fruitful line of research because I believe that closer examination of what people actually do when they deal with the information about others would provide supportive and hardly questionable evidence for the theoretical perspective defended in the present work. Chapter 5 offers a nice summary of the self-categorisation perspective on impression formation. This chapter sets the stage for the four following empirical chapters.

In Chapters 6, 7, 8, and 9, Kate presents a succession of very original, extremely thought-provoking and most competently performed studies. Although all the findings are not always entirely compatible with the current formulation of self-categorisation theory, they are very clearly at odds with the dominant social cognition dogma. Notably, they show that limited cognitive resources or the absence of vested interest may not provide a satisfactory account of people’s tendency to rely on group-level perception. Most importantly, the various studies provide striking support for the idea that individuation and stereotyping are not to be taken as
distinct impression formation processes but rather stand as two instances of the basic process of categorisation. In my opinion, Kate Reynolds makes a true contribution to the field by unifying two aspects of social perception under the same umbrella of categorisation and by questioning the traditional dichotomy between accurate individuation and errorful stereotyping. Given the level of sophistication of Kate's analysis, I have every reason to believe that it will exert a sizeable impact on the way researchers may come to study social perception. For all these good reasons, I consider that the present dissertation is an excellent piece of work and that Kate fully deserves to become a colleague.
Comments on Kate Reynolds's PhD Thesis

How do people form impressions of others whose group membership is known? The question of stereotyping is a pressing issue in multicultural societies like Australia. In the current political and social climate, the importance of this topic could hardly be overemphasized. And I welcome the emergence of this exceedingly promising researcher, Kate Reynolds, as a bright hope in our quest for understanding the complex issue of social stereotyping. I congratulate both Ms Reynolds and her supervisor on this excellent work, and recommend that Ms Reynolds be unconditionally admitted to the degree of Doctor of Philosophy.

The thesis is at once a metatheoretical critique, a theoretical exposition, and an empirical examination of the impression formation process. Ms Reynolds examines currently popular models of social stereotyping (dual process and continuum models), and brings out the fundamental assumption that there are two distinct processes, group membership based impression and individuated perception. She set out to evaluate this assumption, in contradistinction with the implications of self-categorization theory. The thesis addresses a major empirical question, why impressions appear to be more or less group membership based depending on the context. The four experiments convincingly show that the comparative context (interpersonal, intragroup or intergroup) plays the most important role in producing stereotyped or individuated impressions. The dual process and continuum models must contend with the results of the experiments, which at most present some difficulty to the theories, and at least present a major problem in generalizing these currently popular North American models to Australia. The result is a significant contribution to the field of person impression formation.

Impressive the thesis may be, I would like to engage in some constructive discourse in the interest of further development of the field, and perhaps to stimulate further thoughts on the part of the candidate. Some are comments and observations, some are suggestions, and some are friendly criticisms. I hope Ms Reynolds finds them useful.

The use of Jim Bolger's comments in Chapter 1 cleverly sets up the main point of the thesis. It points to the cultural belief in “abstract individual” pervasive in the English speaking part of the world. The notion of “abstract individual” posits that there exists an individual who is equipped with a fixed set of abilities and desires. The individual is then capable of calculating the utility of an action based on his or her own desires. This notion underlies social contract theories of social organization and governance, which roughly takes the following form. A social order is formed as a result of a contract among utility maximizing individuals, so that the individuals can avoid the Hobbesian natural state of “all against all”.

This conception of the person also underlies much of the past and current discourse on stereotypes and stereotyping as Ms Reynolds pointed out in Chapters 2-4. When she lamented that the traditional discourse on stereotypes often fails to recognize the “reality of groups” (Chapter 2), she was probably reacting against this element of individualism.
Indeed, the notion of abstract individual takes the individual as the building block of sociality; a group is a sheer aggregate of multiple individuals. It follows then that there are significant individual differences within a group; if a characteristic attributed to the group is applied to an individual, it is bound to be an overgeneralization. Scientific discourse by necessity reflects cultural discourse. The structure of the traditional arguments about stereotypes in social psychology echoes this line of reasoning.

In Chapter 3, Ms Reynolds gave an historical sketch of the elemental vs. configural process debate and the meaning change controversy, and how these themes recur in the current models of person impression formation. I should comment that the whole debate is in a way a specific instantiation of the larger debate about the meaning of meaning (to borrow Ogden and Richards’s famous title). On the one hand, the British empiricism (most clearly by Hume) advocated that meaning is basically learned associations among ideas. On the other hand, Kant and his successors such as Gestaltists argued that meaning is not just associations, and that there are possibly innate “categories” in the mind, including such basic ideas as time, space, and causality. The associationist position turned up in the form of elemental process models, and the Kantian-like position was taken by Asch and others who took the configural perspective.

As Ms Reynolds correctly pointed out, the debate was not settled, and probably could not have been settled within the framework in which the researchers were operating at the time. The researchers often took a simplistic perspective that the entire meaning of an adjective was exhausted by its evaluation, one aspect of connotative meaning. This is at best a rather impoverished conception of “meaning”. Surely, the meaning of meaning goes far beyond an evaluative connotation of a concept.

At present in social psychology, the notion of meaning demands serious consideration. As I understand it, a central assumption of self-categorization theory (and indeed the social identity approach in general) is the human propensity for “effort after meaning”. I do not call myself a social identity researcher, but I strongly endorse this view, and I too attempt to examine its implications in social processes. At one level, Ms Reynolds’s thesis clearly showed that impressions of a person are dependent on the meaning of the context in which the person is perceived. What is this “meaning” then? The kind of meaning she examined in the thesis is interpersonal and intergroup comparisons. Do they exhaust the meaning of meaning? I suppose not. What other kinds of meaning would affect person perception? I hope Ms Reynolds’s future endeavour may be directed at refining the concept of meaning. I was encouraged to see her concern about the notion of consistency in Chapter 10 (section 10.4.2), a sign of her interest in a wider conception of meaning.

The experiments were well designed and conducted. However, I wish to make one methodological comment, which generally applies to the experiments reported in the thesis. Ms Reynolds did not report the pretests she conducted when she constructed her experimental materials. She should mention how these pretests were done when she writes them up for publication. I also wonder whether a pretesting of stimuli is possible in principle from the perspective that the meaning of a stimulus is in flux. There is no need to
justified in the thesis. Most researchers do this anyway. Still, this is something we all need to reflect on. I will return to this point later.

In Chapter 6, Ms Reynolds reports an interesting experiment in which she finds an effect of comparative context, but not an effect of interdependence. Two comments are in order. First, this experiment confounds target type (lateral versus logical style) with comparative context. That is, the target was a lateral problem solver in the interpersonal context, but a logical problem solver in the intergroup conditions. This is rectified in Experiment 2, and therefore it is not a major problem. However, it needs to be acknowledged. From the self-categorization perspective, nonetheless, the subjects’ own self-categorization should also be important. Therefore, this experiment can be interpreted as controlling for the subjects’ self-categorization, and as such, it serves an important purpose despite the confound. My second comment relates to the finding of no effect of interdependence. The implication of this is strengthened by the fact that the manipulation was successful. One more point to consider, however, is the statistical power of this experiment. It is possible to argue that the sample size was too small to detect an effect. To counter this, I suggest Ms Reynolds to conduct a power analysis. If she can show that the power is not too small, and yet she failed to detect an effect of interdependence, this would further strengthen her finding.

Chapter 7 reports what I take to be a strong finding for Ms Reynolds’s position. One technical point is her use of protected t-tests here and elsewhere in deciphering complex interaction effects. Protected t-tests are perhaps conservative, but simple effects analyses should give more interpretable results in general. This is because the latter uses the same error term as the main analysis. In future, Ms Reynolds may wish to consider the latter option.

In Chapters 8 and 9, Ms Reynolds attempted to show the existence of an accentuation effect in both interpersonal and intergroup contexts. She successfully showed that, and corroborated her earlier findings that a more individuated impression is obtained in the interpersonal context than in the intergroup context. Nonetheless, I think her conclusion is overdrawn when she interprets the result as showing the operation of categorization process in the two contexts. I believe Ms Reynolds is right when she said categorization implies accentuation (proposition p). However, this does not mean that accentuation implies categorization (proposition q). The two propositions are not equivalent. Note that by the standard propositional logic, proposition p implies that the lack of accentuation implies the absence of categorization, but does not imply that accentuation implies categorization. To assert the latter is to commit a logical fallacy.

Having said that, Chapter 8 nonetheless reports fascinating results. Setting aside the main findings of accentuation, the results of Table 8.4 are intriguing. Although the interaction effect of comparative context and dimension on difference scores was only marginally significant, the results seem interpretable in the following manner. Let us start with the way in which the targets were constructed in the experiment. Ms Reynolds made it so that target 1 was more stereotypical of arts students than target 2, but they were roughly equally female stereotypical (Table 8.1). In the interpersonal context, the subjects’ ratings
reflected the difference that Ms Reynolds constructed. However, in the intergroup contexts, the subjects’ ratings did not reflect this. Rather, the targets were seen to be equally similar on both female and arts/engineering dimensions in the intragroup context, and equally different on both dimensions in the intergroup context.

What is intriguing is this. The female and arts/engineering dimensions behave as if they are highly correlated dimensions in the arts/engineering intergroup context (both intra and inter), but the dimensions appear to behave as separate dimensions in the interpersonal context. I suspect the female dimensions such as communicative and sensitive (p. 236) describe a more “arts” than “engineering” type in general. The intergroup context in a way coalesce the two dimensions into one. However, in the interpersonal context, the two dimensions are separated. The individual targets who are created so that the arts/engineering dimension differentiates them (and therefore the dimension is meaning producing) are in fact perceived to be different on that differentiating dimension, but the targets are perceived not to differ on the female dimension on which the targets were not differentiated. The net result is that the meaning of “female” and “arts/engineering” dimensions changed as a function of their ability to differentiate the targets!

This raises two issues. First, how can Ms Reynolds interpret her pretest results of some statements used for the experiment as stereotypical of “female” or “arts” or “engineering”? The subjects appear to behave as if they are “accurately” reflecting the difference between the target individuals as created in accordance with Ms Reynolds’s pretest results. This sounds as if the results can be interpreted in a way consistent with the Fiske-Neuberg model. Yet, I think this interpretation is wrong. A better interpretation is that the subjects in the interpersonal context made ratings in the manner similar to those in the pretest condition, that is, the pretest condition in fact reflects a kind of interpersonal context. I wonder what this means (remember I suggested before Ms Reynolds should think more about the pretest condition). Would this mean that the subjects’ default comparative context is something like the interpersonal context?

Second, what implications would this have on the question of meaning change? I believe first of all Ms Reynolds should try to replicate this finding perhaps using somewhat different dimensions and groups. If she can obtain a conceptual replication, it seems to me the results can be interpreted as strong evidence for a meaning change. Furthermore, the results would imply that at least one central mechanism for the production of meaning is differentiation. This reminds me of de Saussure’s notion of meaning. But, this finding points to a more dynamic notion of meaning, not the meaning fixed in langue but a meaning produced in parole. I think this interpretation is in line with self-categorization theory. I hope Ms Reynolds pursue this line of work further.

In Chapter 9, Ms Reynolds showed some context effects on person perception. She clearly shows that there is some variability in perceptions of an individual, and therefore there is no single fixed and “accurate” perception at the individual level. Her claim that individual perceptions are as variable as group perceptions is well taken. Does this really contradict the assertion made by the currently popular models that the individuated impression
reflects the actual? If they mean that “the actual” is “the fixed”, then Ms Reynolds’s conclusion holds that her findings contradict their assertion. And I suspect she is right about this. The notion of “abstract individual”, which I mentioned earlier, is extremely strong in the current literature of social psychology. I think Fiske and Neuberg implicitly assumed that the actual is the fixed, and the fixed and stable is the actual. However, I am sure those theorists would argue that they didn’t really mean it, and that context effects on individual person perception are well known. Ms Reynolds is likely to face some fierce opposition from these theorists when she tries to publish the results. I suggest that she reads up on the literature of assimilation and contrast effects in person perception. She may find it useful in anticipating potential counterarguments.

In the final chapter, Ms Reynolds nicely concludes the thesis by going back to Jim Bolger, and the first question she posed, bringing a satisfactory closure to this narrative.

All in all, this is an excellent thesis. I welcome the arrival of a new colleague in the field!

As a post script, let me make some minor points.

On p. 114, the second paragraph criticizes Neuberg and Fiske’s interpretation of their results. Ms Reynolds argue that the mean ratings are not negative, and therefore cannot be taken as evidence of category-based impression formation. I understand her frustration about their perhaps too flexible a style of interpretation. Nonetheless, this is a moot point from their perspective. They claim the category-based and the individuated impressions are two extremes of a continuum. Their claim is only that the mean is more negative in the high motivation/neutral condition relative to the other conditions. It is unfortunately not a strong criticism.

On p. 140, the 3rd line from bottom. “bought” should be “brought”.

On p. 180, paragraph 1. The F value for the main effect of comparative context is reported as $F(1,52)$, but isn’t this $F(2,52)$?

P. 200, paragraph 3. “Subjects where” should be “Subjects were”.

P. 210, line 12. “would agreed” should be “would agree”.
Beyond the information given: Capacity, context and the categorization process in impression formation

Katherine Jane Reynolds

A thesis submitted for the degree of Doctor of Philosophy of The Australian National University

November, 1996
DECLARATION

The research reported in this thesis is my own, except where indicated, and has not been submitted for a higher degree at any other institution

Katherine Jane Reynolds
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration of authorship</td>
<td>i</td>
</tr>
<tr>
<td>List of tables</td>
<td>vi</td>
</tr>
<tr>
<td>List of figures</td>
<td>vii</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>viii</td>
</tr>
<tr>
<td>Abstract</td>
<td>ix</td>
</tr>
</tbody>
</table>

## Chapter 1  Introduction and overview of the thesis

1.1 The problem examined in the thesis                                   | 1    |
1.2 Overview of the thesis                                              | 6    |

## Chapter 2  Early approaches to social perception: "In the character of the beheld"

2.1 Introduction                                                        | 11   |
2.2 Differences between object perception and person perception         | 14   |
2.3 Early person perception research                                    | 19   |
2.3.1 Recognition of emotion                                            | 19   |
2.3.2 Our ability to judge others accurately                            | 22   |
2.3.3 Cronbach’s critique of the early person perception research       | 27   |
2.4 Early approaches to stereotyping                                    | 33   |
2.4.1 Are stereotypes distorted representations?                       | 34   |
2.4.2 Stereotypes as valid representations                              | 39   |
2.5 Conclusions                                                         | 44   |

## Chapter 3  The focus on process: The configural/ elemental controversy

3.1 Introduction                                                        | 47   |
3.2 Impression formation and the meaning change debate                  | 47   |
3.2.1 The configural model                                              | 49   |
3.2.2 Information integration theory                                    | 50   |
3.3 Elemental and configural models: Modern integrations                | 55   |
3.3.1 Dual process model                                                | 62   |
3.3.2 Evidence for personalization in the dual process model            | 65   |
3.4 Conclusions                                                         | 67   |
3.3.3 The continuum model
3.3.4 Evidence for piecemeal integration in the continuum model
3.4 The elemental process revisited
3.5 Conclusions

Chapter 4 Categorization and the conservation of cognitive resources

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Introduction</td>
<td>96</td>
</tr>
<tr>
<td>4.2 Social cognition and categorization</td>
<td>98</td>
</tr>
<tr>
<td>4.2.1 Use of category labels save time and effort</td>
<td>100</td>
</tr>
<tr>
<td>4.2.2 Use of categories leads to overgeneralization</td>
<td>102</td>
</tr>
<tr>
<td>4.3 When do we stereotype and individuate others?</td>
<td>105</td>
</tr>
<tr>
<td>4.3.1 Motivational factors</td>
<td>106</td>
</tr>
<tr>
<td>4.3.2 Cognitive load and the stereotyping process</td>
<td>122</td>
</tr>
<tr>
<td>4.4 Conclusions</td>
<td>128</td>
</tr>
</tbody>
</table>

Chapter 5 Social identity, self-categorization and the role of the group in impression formation and social behaviour

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Introduction</td>
<td>130</td>
</tr>
<tr>
<td>5.2 The reality of the group</td>
<td>133</td>
</tr>
<tr>
<td>5.3 Categorization and accentuation</td>
<td>140</td>
</tr>
<tr>
<td>5.3.1 Accentuation effects</td>
<td>141</td>
</tr>
<tr>
<td>5.3.2 The minimal group</td>
<td>146</td>
</tr>
<tr>
<td>5.4 Social identity theory</td>
<td>148</td>
</tr>
<tr>
<td>5.5 Self-categorization theory</td>
<td>151</td>
</tr>
<tr>
<td>5.5.1 Categorization as a meaning-giving process</td>
<td>152</td>
</tr>
<tr>
<td>5.5.2 The formation of individuated and stereotypic impressions</td>
<td>155</td>
</tr>
<tr>
<td>5.6 Understanding categorization from the cognitive perspective</td>
<td>158</td>
</tr>
<tr>
<td>5.7 Conclusions</td>
<td>161</td>
</tr>
</tbody>
</table>

Chapter 6 Interdependence, comparative context and variations in impression formation

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 Introduction</td>
<td>164</td>
</tr>
<tr>
<td>6.2 Method</td>
<td>167</td>
</tr>
<tr>
<td>6.2.1 Subjects and design</td>
<td>167</td>
</tr>
</tbody>
</table>

iii
| Chapter 9  | Categorization, accentuation and individuation |  
|------------|---------------------------------------------|--------|
| 9.1        | Introduction                               | 244    |
| 9.2        | Method                                     | 247    |
| 9.2.1      | Subjects and design                        | 247    |
| 9.2.2      | Procedure                                  | 248    |
| 9.2.3      | Materials                                  | 250    |
| 9.3        | Results                                    | 253    |
| 9.3.1      | Manipulation checks                        | 253    |
| 9.3.2      | Type of impression                         | 253    |
| 9.3.3      | Impression content and accentuation measures | 255    |
| 9.3.4      | Analysis of other measures                 | 262    |
| 9.4        | Discussion                                 | 263    |

| Chapter 10 | Summary and conclusions                   |  
|------------|-------------------------------------------|--------|
| 10.1       | Introduction                              | 267    |
| 10.2       | Recapitulation                            | 268    |
| 10.3       | Theoretical implications: What contribution has been made in this thesis? | 279    |
| 10.4       | Future directions                         | 281    |
| 10.4.1     | Variability of self-perception            | 282    |
| 10.4.2     | The role of inconsistent information      | 284    |
| 10.5       | Final comments                            | 287    |

References                                                                 289
Statistical appendix                                                       319
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Means for manipulation check measures</td>
<td>174</td>
</tr>
<tr>
<td>6.2</td>
<td>Frequencies and z scores for the relative stereotypicality measure and selection of stereotypic, counter-stereotypic and neutral information.</td>
<td>176</td>
</tr>
<tr>
<td>6.3</td>
<td>Frequencies and z scores for the relative recall measure and recall of stereotypic, counter-stereotypic and neutral information.</td>
<td>181</td>
</tr>
<tr>
<td>6.4</td>
<td>Means for other response scale measures.</td>
<td>185</td>
</tr>
<tr>
<td>7.1</td>
<td>Frequencies and z scores for the relative stereotypicality measure and selection of stereotypic, counter-stereotypic and neutral information.</td>
<td>202</td>
</tr>
<tr>
<td>7.2</td>
<td>Means for recall measures</td>
<td>208</td>
</tr>
<tr>
<td>7.3</td>
<td>Means for other response scale measures.</td>
<td>211</td>
</tr>
<tr>
<td>8.1</td>
<td>The type of statement made by each participant and the order of the contribution</td>
<td>230</td>
</tr>
<tr>
<td>8.2</td>
<td>Means on measures to assess the relationship between target 1 and target 2</td>
<td>233</td>
</tr>
<tr>
<td>8.3</td>
<td>Mean scores for target 1 and target 2 on trait measures</td>
<td>235</td>
</tr>
<tr>
<td>8.4</td>
<td>Mean difference scores between target 1 and target 2 on combined dimensions</td>
<td>237</td>
</tr>
<tr>
<td>9.1</td>
<td>The selection of particular traits as most typical of impressions represented as a percentage.</td>
<td>257</td>
</tr>
<tr>
<td>9.2</td>
<td>Mean difference scores and standard deviations on female and science dimensions</td>
<td>259</td>
</tr>
<tr>
<td>9.3</td>
<td>Means for other response scale measures</td>
<td>262</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Relative frequency of stereotypic versus counter-stereotypic word selection in interpersonal (Personal), intergroup low salience (GroupL) and intergroup high salience (GroupH) conditions.</td>
<td>177</td>
</tr>
<tr>
<td>6.2</td>
<td>Frequency of stereotypic word selection</td>
<td>178</td>
</tr>
<tr>
<td>6.3</td>
<td>Frequency of counter-stereotypic word selection</td>
<td>179</td>
</tr>
<tr>
<td>6.4</td>
<td>Relative recall of stereotypic and counter-stereotypic information.</td>
<td>182</td>
</tr>
<tr>
<td>7.1</td>
<td>Relative frequency of stereotypic versus counter-stereotypic word selection in interpersonal (Personal), intragroup (Intra) and intergroup (Inter) conditions.</td>
<td>203</td>
</tr>
<tr>
<td>7.2</td>
<td>Frequency of counter-stereotypic word selection</td>
<td>205</td>
</tr>
<tr>
<td>7.3</td>
<td>Frequency of stereotypic word selection</td>
<td>206</td>
</tr>
<tr>
<td>8.1</td>
<td>Mean difference scores on combined dimensions</td>
<td>238</td>
</tr>
<tr>
<td>9.1</td>
<td>Selection of stereotype consistent and counter-stereotypic information in interpersonal and intragroup contexts</td>
<td>254</td>
</tr>
<tr>
<td>9.2</td>
<td>Difference scores on female and science dimensions in the science identity and female identity conditions</td>
<td>260</td>
</tr>
<tr>
<td>9.3</td>
<td>Difference scores on female and science dimensions in the interpersonal/science identity and interpersonal/ female identity conditions</td>
<td>261</td>
</tr>
</tbody>
</table>
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This thesis examines the impression formation process, with particular reference to the distinction between individuated and stereotypic impression formation. The emphasis is on issues such as: What factors influence our impressions? When are impressions based on a person's individual qualities? When do we form stereotypic impressions of others? What processes underpin the formation of more individuated or stereotypic impressions? Two theoretical perspectives, social cognition and self-categorization theory, offer divergent explanations of the impression formation process and are the theoretical and empirical focus of the thesis. The argument developed in recent impression formation models based on the social cognition approach is that there are two impression formation processes. Categorization is defined as the process used to form stereotypic impressions, and a categorization-free process is thought to underlie individuated impression formation. Whether one process or the other operates is determined by motivational factors which impact on the level of attention allocated to impression formation, such that increased attention is inversely related to stereotyping. Alternatively, self-categorization theory argues that the types of impressions we form of others are the product of the relational, comparative and context-dependent aspects of social perception. The same categorization process, but operating at different levels of abstraction - interpersonal or intergroup - is argued to underlie variations in impression formation. Historical and contemporary developments related to both perspectives are outlined.

There are four theoretical chapters which address: 1) the early person perception and stereotyping literature (Chapter 2); 2) key models of impression formation (Chapter 3); 3) the social cognition analysis of the categorization process (Chapter 4); and 4) social identity theory and self-categorization theory (Chapter 5). Based on the theoretical analysis two main points of distinction between self-categorization theory and the social cognition approach emerge: 1) whether attentional capacity or the salient level of categorization can
best account for variations in impression formation; and 2) whether both stereotypic and individuated impressions are formed through the same categorization process. These issues frame the empirical work of the thesis.

Four experiments are reported. Experiments 1 and 2 (chapters 6 and 7), directly examined whether variability in impression formation is due to different levels of attentional capacity or the defining social comparative context - interpersonal or intergroup. In these studies interdependence (Experiment 1) and accuracy goals (Experiment 2) together with the salient comparative context were manipulated. Overall, there was no systematic evidence that subjects formed more individuated impressions under conditions thought to motivate the allocation of attentional resources (in interdependent and accuracy goal conditions). However, results suggest that more individuated impressions were formed in interpersonal contexts and that stereotyping increased under conditions where ingroup-outgroup categorizations were salient.

The role of categorization in impression formation is then examined in experiments 3 and 4 (chapters 8 and 9). Is it the case, as self-categorization theory would predict, that all impressions are formed using the same categorization process? It is argued in these chapters that if it can be shown that self-other similarities and differences are accentuated when both individuated and stereotypic impressions are formed, then this would provide evidence of categorization. In these two experiments, the findings suggest that self-other context-dependent accentuation is the basis of impression formation in interpersonal and intergroup contexts. The results of Experiment 4, in particular, indicate that individuated impressions are as much based on relative self-other interpersonal judgements as stereotypic impressions are based on relative intergroup comparisons. The results of these studies enable us to draw some conclusions about the relative accuracy of individuated and stereotypic impressions and the role of the categorization process in impression formation. In the final chapter future directions for research are outlined.
1.1 The problem examined in the thesis

At the end of September 1996, the then Prime Minister of New Zealand, Mr. Jim Bolger, was interviewed on an Australian current affairs program. At this time racism was, for several reasons, a front page issue in Australia and Bolger was asked to comment. He said:

There are certain politicians, I guess, all around the world, your country and mine included who can't handle the race issue. They always go to extremes... There are people who can't seem to understand that you judge people on who they are, not which country they've come from, what the colour of their skin is or the culture of their origin. *(cited in The Australian, 2 October, 1996, emphasis added)*

Bolger's response to the race debate, then, is to repeat this piece of conventional wisdom - the idea that group affiliations mislead us in our dealings with others. He shares with many other well-meaning social commentators the basic premise that we should always treat people as individuals, on the basis of "who they are", rather than in
terms of their group memberships. This approach to the race issue certainly has political advantages and popular appeal, but what are the social psychological implications? Does the political efficacy of this emphasis on the individual translate straightforwardly to social psychological processes? Are individuated impressions inherently more accurate, valid and reality-oriented than group-based impressions? This is the issue addressed in this thesis.

The impressions we form of others clearly impact on our attitudes and behaviour and shape social life. Consequently, impression formation has been and remains a core topic within social psychology. Research has focused on problems such as: How do we define what others are actually like - "who they are"? How do we recognise emotion and other characteristics? What are the qualities of a "good" judge of others? What is the impact of our impressions? How do we, as perceivers, integrate the complex information available about others?

More recent emphasis on the impression formation process has stimulated interest in the variability of our impressions. Clearly, our impressions of others fluctuate all the time. During the course of a conversation the way we perceive others can shift from being based on their individual, unique characteristics to being shaped by features they share with other group members and vice versa. Impressions can also vary within these broad types, such that the specific nature of perceived personality and perceived stereotypicality change with context. There has been a recent surge in journal articles which have variability as one of their themes; "Perceiving persons and groups"

This thesis aims to examine further not only how the impression formation process is understood but also how variations in the types of impressions we form of others are explained. What factors influence our impressions? When are impressions based on a person as an individual and when are impressions based on their salient group memberships? What processes underpin the formation of more individuated or stereotypic impressions? Current theoretical explanations of why and how our impressions vary contradict each other in important meta-theoretical, theoretical and empirical ways. Two main perspectives are investigated in detail in this thesis: the social cognition perspective, and an analysis derived from self-categorization theory.

In the social cognition literature, the prevailing view is that stereotypic and individuated impressions arise from different impression formation processes. Current and influential embodiments of this perspective are Brewer’s (1988) dual process model and Fiske and Neuberg's (1990) continuum model. Both these models argue that stereotypic impressions are formed through categorization, where a category label or stereotype is used to shape impressions. A categorization-free process, through which independent traits are summed in isolation in an attribute-by-attribute way, is proposed to explain how we form individuated impressions. Thus, we either use the predetermined knowledge "in our heads" (categories), or the actual
attributes and idiosyncratic information about the person "out there", to form particular impressions. Both models draw on the influential work of two prominent impression formation researchers, Solomon Asch and Norman Anderson, and related research to support the use of distinct processes in impression formation.

Alternatively, self-categorization theory maintains that one process - categorization - underlies all impression formation (Oakes, Haslam & Turner, 1994; Oakes & Turner, 1990; Turner, Hogg, Oakes, Reicher & Wetherell, 1987; Turner, Oakes, Haslam & McGarty, 1994). Individualized and stereotypic impressions are differentiated in terms of the level of abstraction at which the categorization process operates - either interpersonal or intergroup. Where interpersonal comparisons are relevant individualized impressions are formed whereas in intergroup contexts, where we perceive ourselves and others as interchangeable members of social groups, stereotypic impressions predominate. Stereotypes are not interpreted as fixed, stable representations but as dynamic products of the contextual relationship between groups.

In self-categorization theory the type of impressions formed of others is directly related to self-perception, how we perceive ourselves in a given situation. All impression formation is, therefore, comparative. Whether we use conventionally defined attributes (e.g., intelligent, arrogant, friendly) or category labels (e.g., French, sexist male, yuppie) as the basis of our impressions, these judgements are comparative judgments and comparison is the basis of categorization (Tajfel, 1972; Turner, 1987).
Clearly, there are conflicting explanations of the impression formation process. Are individuated and stereotypic impressions formed through the same process or different processes? The answer to this question has direct implications for how variations in our impressions are explained. In models where two impression formation processes are advocated it is argued that a person ideally should be exclusively defined in terms of their idiosyncratic characteristics. However, it is seen as much easier and cognitively efficient to form group-based impressions of others because individuation consumes precious resources. Variations in the type of impressions we form of others are explained in terms of the amount of cognitive effort allocated to the impression formation process. Motivational factors, such as the goals of the perceiver, impact on how much attention perceivers are willing to invest at any given time.

In self-categorization theory variations in impressions are explained through the fluid and context-dependent nature of self-perception. The impressions we form of others are seen as relative to self-categorization as either a unique, differentiated individual or interchangeable, group member. Importantly, self-categorization is argued to vary in a lawful and rational way given variations in the comparative context and the way these variations are explained. Consequently, what a person is like, "who they are", is a relative, rather than an absolute, judgement.

The way the impression formation process and variations in impressions are explained in social cognition research and self-
categorization theory offer fundamentally different interpretations of social perception. This thesis endeavours to both examine and make a contribution to resolving these divergent accounts.

In summary, the theoretical and empirical substance of this thesis is expressly defined in terms of the self-categorization theory and social cognition accounts of impression formation and is framed by the questions: 1) how is variability in impression formation explained? and 2) are stereotypic and individuated impressions formed through use of the same process or different processes? The conclusions contribute to the ongoing debate in social psychology regarding how human perceivers process information and make sense of the world around them.

1.2 Overview of the thesis

Impression formation is social perception. It concerns how people come to understand and think about others - the manner in which we judge others. Much of social psychological research could at some level be related to the issue of impression formation. In the interests of addressing the aims of the thesis as outlined above, research related to the self-categorization theory and the social cognitive analysis of impression formation is the central focus.

Traditionally, impression formation research has been divided into two main areas. Personalised, individuated impressions have been the focus of the person perception literature and group-based impressions have been the focus of work on intergroup relations and stereotyping. Research in both these areas of social perception is
reviewed in Chapter 2. It becomes clear that the separation of this research into two largely distinct areas has restricted the examination of important questions regarding the role of the perceiver in social perception.

The key assumptions of this early research are that: 1) accurate person perception is defined in terms of the formation of individuated impressions and 2) stereotypic impressions are inherently "distorted", "inaccurate" and "contrary to fact". These same assumptions are reflected in more recent social cognition models of impression formation (chapters 3 and 4). Only a minority of researchers, Asch and Sherif included, challenged the view that "we can best achieve a correct view of a person by ignoring his [sic] group relations" (Asch, 1952, p. 238). Asch and Sherif explicitly argued that groups are real and that stereotypes may reflect the relationships between groups in society. This alternative view of stereotypes offers a group-based approach which has been further developed in social identity theory and self-categorization theory (Chapter 5).

Since the 1950s and 1960s the emphasis has been on the impression formation process. Theoretical developments have meant that person perception and stereotyping research have increasingly come together in the models that have evolved. Brewer (1988) and Fiske and Neuberg (1990) make important contributions by attempting to integrate both person perception and stereotyping research in their impression formation models. Ironically, perhaps,

---

1 In this thesis the use of non-sexist language is endorsed but in the interests of readability the practise of noting such language in future quotations will be discontinued.
substantive differences in the conception of the person perception process across the individual and group-based literatures, have been made more explicit through attempts at integration and have resulted in the postulation of two different impression formation processes. Chapter 3 examines in detail not only the arguments developed in these influential models but also the evidence they draw on to support the existence of their controversial categorization-free, attribute-by-attribute, elemental process.

In Chapter 4, the other impression formation process recruited by these models - categorization - is closely examined. Understanding categorization from the perspective of these recent models, and the broader social cognition literature, is the focus. Categorization is seen to conserve cognitive resources and through this process information becomes simplified but also overgeneralized. Stereotypic impressions, which are formed through categorization, are interpreted as being distorted compared to more accurate, person-based impressions. The relationship between categorization, use of stereotypes and resource preservation directly affects the way variations in the impressions we form of others are explained. When perceivers are motivated to allocate attention and cognitive resources to the impression formation process more accurate, individuated impressions are possible.

A fundamental criticism of much of the person perception, stereotyping and impression formation research is that it is individualistic. An explicit assumption is that to perceive others as individuals is inherently real, valid and accurate. In Chapter 5, an alternative view is articulated where the individualistic analysis
inherent in the social cognition literature is rejected.

The structural and psychological reality of both individuals and groups are recognised in social identity theory and self-categorization theory. Rather than emphasising one or the other "the primary reality of individual and group" are recognised as "the two permanent poles of all social processes" (Asch, 1952, p. 250-251). Self-categorization theory endeavours to understand the relationship between individual behaviour and group behaviour, the self and the group, and a completely different understanding of the categorization process has emerged.

Importantly, it becomes clear in Chapter 5 that it is the way categorization is interpreted in current impression formation models and self-categorization theory which fundamentally leads to different interpretations of the impression formation process and to different explanations of the variability inherent in our impressions. These different theoretical approaches shape the empirical work of the thesis.

In chapters 6 to 9 the empirical work is outlined. Experiments 1 and 2 directly investigate different explanations of why the impressions we form of others vary - why do we sometimes form impressions of others as individuals and at other times as group members? Is the variability in impression formation due to different levels of attentional capacity or to variations in the defining comparative context - interpersonal or intergroup? Naturally, the results of these studies have implications for the way categorization is
conceptualised from the different perspectives.

In experiments 3 and 4 the focus shifts to examination of the impression formation process. Is there any evidence that categorization may underlie the formation of both individuated and stereotypic impressions? There is general agreement that evidence of categorization is accentuation of similarities and differences. It is argued in these chapters that if it can be shown that self-other similarities and differences are accentuated when both individuated and stereotypic impressions are formed, then this would provide evidence of categorization. Therefore, both experiments focus on the pattern of accentuation when different types of impressions are formed of others. The results of these studies enable us to draw some conclusions about the relative accuracy of individuated and stereotypic impressions and the role of the categorization process in impression formation.

In Chapter 10, a recapitulation of the argument developed throughout the thesis is provided. Conclusions from the present research are integrated and theoretical implications are discussed. Future directions for research are also outlined. It is possible in the concluding chapter to make some final comments regarding the social psychological validity of Jim Bolger’s comments on racism. However, the analysis begins with an assessment of the early social perception research and the assumptions which have shaped contemporary models of impression formation.
2.1 Introduction

This chapter discusses historical developments in our understanding of impression formation. How do we form impressions of others? Are our impressions accurate? Should we always perceive the same person in the same way? Are those we form impressions of static and constant? How do we assess impression formation? These questions are fundamental to understanding impression formation and many of them have been the focus of past and present research.

Taking an historical perspective we can assess where there has been progress and inertia in our understanding of the impression formation process. Traditionally, there has been a dichotomy in the impression formation literature. Personalised, individuated impressions have been the focus of the person perception literature and group-based impressions have been the focus of work on intergroup relations and stereotyping. Both areas address the question of how people come to understand and think about others. The separation of social perception research into these two largely distinct areas has restricted the direction of research and the examination of important
issues. As will be seen in the progression of this thesis, models that address both person perception and group perception, the formation of individuated and stereotypic impressions, and the use of attributes or categories, have recently flourished.

To appreciate the context in which current theoretical and empirical work is conducted it is necessary to examine early approaches to person perception and stereotyping. Many of the assumptions inherent in current work can be traced to historical developments in the field. For example, the premise that individuated, person-based impressions are more accurate and less variable than group-based perceptions has been dominant throughout person perception and stereotyping research. In this chapter the aim is to make these assumptions more transparent and to focus on issues of direct relevance to the thesis (see Tagiuri, 1968 for a detailed review).

The chapter begins with an examination of how person perception is defined. It is only very recently that person perception has been considered to have features distinct from object perception. The way in which person perception has been differentiated from object perception shaped not only the direction of research but also the theoretical assumptions on which it is based.

A chronological review of significant developments in person perception research is then provided. Early person perception research is divided into three main sections: recognition of emotion, ability to judge others, and Cronbach's critique. First, researchers were interested in whether recognition of emotion was an inherent, generic
ability. Evidence that some people were better able to recognise emotion than others led to the second area of research where more general questions about the ability to judge others were investigated. To assess judges' ability to form accurate impressions it was necessary to measure how the perceiver assessed and evaluated the target. Techniques also needed to be developed to measure the target of judgement so a criterion could be established. One of the most interesting aspects of this research is the way in which the "correct" answer was defined.

The third area of the person perception literature outlined in this chapter focuses on Cronbach's 1955 article. Cronbach's impact is significant because he suggested that aspects of accuracy measurement rendered most of the early person perception research invalid. An analysis of Cronbach's work provides clear insights into how the role of the perceiver was understood in early person perception research. He argued that individual variability in perception should be measured, controlled and understood. The aim was to identify those aspects of the perceiver which led them to make a judgement about the target that differed from that made by other perceivers. It would then be possible to understand the reasons why all perceivers did not view the inherently stable stimulus - the individual person - in the same way.

A large focus of the person perception literature was on the question of forming accurate impressions of others. A similar theme develops in the final section of this chapter where the "other half" of early social perception research, the stereotyping literature, is reviewed and discussed. Initial investigations of stereotyping were
also concerned with the extent to which stereotypes were accurate. An assumption that stereotypes were inherently distorted challenged researchers to determine the actual extent of their (in)accuracy. The goal from the outset was to explain potential distortion, and the role of the perceiver received explicit attention in the theories that developed. Two directions for research emerged. On the one hand, some researchers argued that stereotypes were distorted and based on faulty cognitive processes, whereas others suggested that stereotypes were valid and reflected the real perceived relationships between groups. Both theoretical contributions are outlined.

2.2 Differences between object and person perception

This section reviews the definition of person perception, and its distinction from other forms of perception. Many of the assumptions which have guided person perception research stem from the way person perception is differentiated from object perception. Up until the end of the eighteenth century questions about how we come to know the characteristics of others were mainly subsumed by philosophical questions, such as, how we know anything at all? However, the physiognomy literature, dating back to Aristotle and other Greek philosophers, is a clear exception. Physiognomy was primarily concerned with inferences made about character from physical qualities. For example, it was believed that courage was related to hair strength throughout the animal kingdom (Sarbin, Taft & Bailey, 1960). With developments towards empiricism, assumptions about the relationship between cues and character were further explored. Darwin reported some of the first experiments related to person perception in 1872, but the area did not gain momentum until the mid-
nineteenth century. As will be elaborated in the next section, Darwin's research had a huge impact on person perception research, influencing the type of questions asked and how they were investigated.

It is not entirely clear why it is only relatively recently that there has been a keen interest in questions regarding impression formation. In part, it was not until recently that potential differences between knowing in general and knowing others were explored, and this stimulated interest and research in how we understand others. Sarbin et al. (1960) identified four main dimensions on which person perception could be seen as distinct from object perception, and discussion of this original basis of differentiation provides insight into the way person perception is defined.

The first distinction concerned complexity and stability. Person perception has been understood to be more complex than object perception with more diverse variables that are difficult to isolate. Objects are perceived as less likely to change across contexts so "it is much easier to isolate a typical thing-object from its environment than to isolate a person-object in order to achieve some stability" (Sarbin et al., 1960, p. 13). It is widely believed that the variables of interest to person perception are stable characteristics that are impervious to environmental changes. As perceivers we "search to perceive the invariant properties of other people ... we focus not on his behavior, which is ever-changing, but on more invariant characteristics namely ... intents and purposes" (Hastorf, Schneider & Polefska, 1970, p. 13).

The second difference between object and person perception was
that values are involved in person perception, and there is more potential for emotional involvement. People and groups can become positively and negatively valued, although it is recognised that some non-human objects such as religious symbols and household animals can be equally valued. Tagiuri (1958) uses the term person perception in such a way that other non-human entities can be incorporated. The term person perception is used "whenever the perceiver regards the object as having the potential of representation and intentionality" (p. x).

Another aspect believed to be unique to person perception is that the observer and the object being perceived, form part of the same context and can influence each other:

Both the perceiver and his "object" have a phenomenal representation of the environment ... Thus through his own presence and behavior in the perceptual situation of the other, the perceiver may alter the perceptual characteristics of the person whose state he is trying to judge. This is, of course, eminently different from the way in which a rock is a source of cues for the perceiver! (Tagiuri, 1958, p. xi)

Observation is seen to change the state of the object being perceived so attention needs to be given to the role of the perceiver and how this may influence the normal actions of others (Hastorf et al., 1970).

The final and possibly the most widely researched distinction between object and person perception is the similarity or assumed similarity between the perceiver and the object being perceived - the person. The similarity between the perceiver and the perceived is
more extensive than with any other object. The perceiver can draw on his or her own experience to identify with the object and infer intentions, feelings and behaviour (Sarbin et al., 1960). The implication of this is that the "perceiver's repertory of categorising responses is somehow limited by his own personal or vicarious experience as a person" (Tagiuri, 1958, p. xi).

Inevitably, the definition of person perception has been closely related to its distinction from other forms of perception. Indeed the term "person perception" has been the subject of some debate. While some prefer "social cognition", others endorse "social perception", which has come to mean general perception or cognition of social variables (see also Tajfel, 1968). Person perception as a term typically implies interpersonal person perception. As stated by Tagiuri (1968, p. 395-396) person perception is:

concerned with how we perceive and know the characteristics of others ... The observations or inferences we make are principally about intentions, attitudes, emotions, ideas, abilities, purposes, traits, thoughts, perceptions, memories - events that are inside the person and strictly psychological.

Stewart, Powell and Chetwynd (1979) identified three significant points that emerge from this widely used definition. The first was that perceivers are capable of achieving a significant degree of accuracy in their impressions of others. Secondly, they noted that there was an implicit assumption that the perceiver reaches their impression in a covert way, accessing "events that are inside the person and strictly psychological". The third point was that the perceiver draws on
extensive and diverse information which is integrated in the person perception process.

In summary, discussion of person and object perception makes some assumptions about person perception explicit. The first is that person-objects do have invariant, stable properties which can be known. In general the context-specific or "ever-changing" properties of people are distinguished from more fixed properties. It is the static features which should most interest perceivers. The second is that because the perceiver can influence the perceived in person perception this influence needs to be recognised and understood. These assumptions have had an impact on early approaches to person perception.

In the definition of person perception, outlined above, it is possible to identify a number of research questions which have been examined in early person perception research. Initially researchers were interested in "observations and inferences" in terms of recognition of emotion. Research tried to establish whether the ability to recognise emotion was generic. The focus then shifted to how "man comes to know and think about others" (Tagiuri, 1968, p. 395) Questions about what makes a good judge dominated research from the 1930s to mid-1950s. A brief overview of the recognition of emotion and the ability to judge others will be presented in this chapter. A third stage in person perception research followed the critique by Cronbach in the mid-1950s. The emphasis shifted to an examination of process, which will be the focus of Chapter 3.
2.3 Early person perception research

2.3.1 Recognition of emotion

Interest in recognition of emotion built on Darwin's research and was the main empirical focus in the area of person perception up until the 1930s. Darwin kindled empirical interest in person perception by conducting experiments on the recognition of emotion. At the time the mainstream view was that emotion was a key factor which distinguished humans from other animals and the presence of emotion was used to defend the existence of a human soul. Darwin challenged these ideas with evidence that expression of emotion could be observed in primates. He believed that emotion was biologically determined and evolved because emotion benefited our primate ancestors (Desmond & Moore, 1991).

In further research, Darwin observed and documented his child's emotional expression from birth. He also produced photographs which depicted the expression of different emotions and assessed how adults recognised emotional expression. These naturalistic but crude experiments were the first systematic attempts to investigate and document aspects of person perception.

Darwin's method of asking people to judge a series of photographs of a person expressing different emotions carries with it the assumptions that one emotion is always expressed in the same way, and that all perceivers know which facial features are associated with which emotions (Hastorf et al., 1970). For example, if someone smiles this means they are happy and all perceivers will interpret this cue as happiness. The methodology also assumes that accuracy in
person perception is straightforward because there is a direct relationship between expression and recognition, independent of the perceiver's own unique experience.

In the first half of the twentieth century, a number of studies were conducted which built on Darwin's assumptions and methodology. Much of this research focused on whether recognition of emotion was a general, ancestral ability. For example, Feleky (1914) also used a series of photographs depicting different emotions (e.g., hate, pity). Judges were asked to define the pose portrayed in the photographs either by using their own label or one provided. It was found that there were large variations in how accurately the expressions in the different photographs were judged.

Using Feleky's data, Woodworth (1938) combined synonymous labels and photographs. For example, those associated with wonder, amazement and astonishment were combined with surprise. In this way he was able to demonstrate a higher level of agreement between the intended emotion and the judges' response. Previously if a photograph was designed to reflect the emotion happiness and the judges' response did not describe this emotion exactly, an error in judgement was recorded. Broader general categories were found to be more accurately judged. Woodworth went on to assess different types of judgement errors associated with the categories identified. Through this process it was recognised that emotions varied in their ease of recognition and some were harder to discriminate than others.

A number of different methods emerged to investigate
recognition of emotion, and factors which mediated success were also identified. Typically a group of judges or experts (such as psychologists) was used to assess and label the expression of an emotion. An emotion could be depicted in a variety of ways, such as by a real person (e.g., Sherman, 1927), through a photograph (e.g., F. W. Allport, 1924, Landis, 1924), a drawing or diagram of a person (e.g., Boring & Titchener, 1923) or via a voice recording (e.g., Knower, 1941). The actual development of the emotion stimulus also varied, sometimes being produced naturally (e.g., Sherman, 1927), in the laboratory (e.g., Landis, 1929) or by combining features of the human face differently (Boring & Titchener, 1923).

The results across studies varied greatly. Some studies supported the view that emotions could be recognised with considerable accuracy (e.g., Munn, 1940) while others reported results that would be expected by chance (e.g., Gulford, 1929; Sherman, 1927). The idea that emotional recognition was a general ability was substantially questioned.

Findings by Landis (1924) also raised doubts about the homogeneity of emotional expression. Photographs taken while a number of subjects performed various tasks designed to evoke different expressions were examined. Landis was unable to identify standard muscle use in expressions across subjects exposed to the same task, and the observed variations raised doubts about the shared and habitual nature of expression. Cross-cultural research provided mixed support for Landis' findings with evidence of marked differences (e.g., Klineberg, 1938) and similarities (e.g., Ekman, 1972) in emotional
expressions across cultures.

Such mixed evidence is typical of the recognition of emotion literature. There are clearly a number of factors involved which make the questions associated with emotion complex and difficult to investigate. Serious questions have been raised about whether recognition of emotion is a general ability. A number of factors, such as the type of stimulus used, the emotion being expressed, and the extent of contextual information incorporated into the judgement have moderated success at emotion recognition (Tagiuri, 1968).

Although some clear insights into the understanding of emotions have been gained since Darwin's initial research, after the 1930s the emphasis in person perception research shifted. Evidence of differences across judges in the ability to recognise emotion spurred interest in the basis of "good" judgement. At the time psychology also emerged further as a discipline and there was a growth of interest in personality, clinical diagnosis and the role of empathy, inference and intuition (Sarbin et al., 1960). One product of this convergence was research into empathy and people's ability to judge others.

2.3.2 Our ability to judge others accurately

The issue of judgement accuracy built on questions about how we recognise emotion and what factors may enhance the correct judgement of emotion. In fact the thinking behind much of the emotion research, that there is a criterion which is compared with a judgement, was transposed to the accuracy issue and person perception generally.
Although from the early twenties there were a number of researchers interested in how we evaluate others (e.g., Adams, 1927; Newcomb, 1931; Thorndike, 1920) it was in the forties and fifties that the issue of accuracy formed the basis of most person perception research. An assumption of this research was that some people are better judges than others and that there are benefits to knowing the qualities which define a good judge.

Understanding the ability to infer another’s attributes and characteristics accurately had wide appeal in clinical, educational and social settings. For example, questions about leadership qualities and whether leadership ability was associated with the accurate judgement of others were raised. In areas of personnel selection, the correct judgement of others was and remains an important issue (Tagiuri, 1968).

Research regarding judgement ability usually involved judges and others to be judged - the targets. Three important considerations in this research are: 1) how is the target information going to be presented to the judge? 2) how will judgement be made? and 3) how is the accuracy of the judge’s response determined? Target information was presented in a multitude of ways. Many of the techniques found their origin in the emotion recognition research. Information about the target was controlled through photographs, handwriting and drawings or was relatively uncontrolled with friends and/or acquaintances judging each other (e.g., Dymond, 1949, 1950) or being judged by a teacher (Cook, 1979). Tape-recorded interviews and filmed interviews (Cline, 1964) were also used.
The diverse techniques used to present target information were matched by the variety of judgement techniques incorporated in the research (see Cook, 1979, for a more detailed discussion). Common ways to measure judgements were:

1) free description where, for example, the response could be a single word or written description. The qualitative nature of these descriptions made scoring difficult;

2) matching information about the target with other information provided. An example of matching was where judges had to match mosaic designs to the subjects who created them (e.g., Taft, 1956);

3) ranking or rating subjects in terms of some particular trait they were judged to have (e.g. intelligence, extroversion). Subjects were also asked to rank or rate themselves on similar dimensions;

4) multiple choice techniques where, based on the information available, a judgement regarding the course of action a target would take was required. A similar approach was to get judges to decide what response the target gave on a particular inventory. The question of whether judges are supposed to respond in the way the target should or would respond is a source of confusion with this measure.

However, the most difficult and controversial aspect of this research was the definition of an accurate judgement. Some common strategies used to determine "the correct answer" were through:

1) rankings or ratings by a group who knew the target;
2) use of expert opinion (there is mixed evidence regarding whether experts have superior judgements);
3) comparisons between the target's self-rating or ranking and that of the judges;
4) use of intelligence and personality
tests which are interpreted as assessing "the true person".

Vernon's (1933) study is a good example of the application of different research methods and the type of conclusions reached. In this study subjects rated on a number of different tests, themselves, others they knew well and strangers. Vernon believed that a variety of tests was necessary to assess personality and to determine the correctness of judgements. Tests included were intelligence, Rorschach inkblots, and matching of such things as character sketches, handwriting and artwork to photographs of strangers. Judges' ability was assessed by comparing their scores with the subjects' scores on the tests. The results revealed three types of judges, differentiated by whether they were judging themselves, a stranger or an acquaintance. For example, good judges of self had high abstract intelligence and moderate artistic ability, whereas good raters of friends were less intelligent and more artistic. Vernon concluded that "it is not possible to discuss the characteristics of the good and bad judge of personality in general" (Vernon, 1933, p. 56).

A number of other studies revealed factors which mediated successful judgements. Amongst many others, factors included interest in the rating procedure (e.g., Conrad, 1933), the visibility of the trait being judged (e.g., Estes, 1938), the importance of the trait to the interpersonal judge/target relationship (e.g., Chowdhry and Newcombe, 1952), the degree of similarity between the judge and target (e.g., Fiedler, 1958), and confidence in the judgement. Some researchers concluded based on such results that there was an intuitive ability used to judge others which led to accurate impressions.
(e.g., Cline & Richards, 1960) while others proposed that evidence of accuracy was limited (e.g., Hollingworth, 1911; Vernon, 1933). Others also argued that accuracy depended on the judgement task and could be a composite of various abilities (e.g., Allport, 1937).

G. W. Allport (1937), in a review of the literature, drew some widely accepted conclusions regarding research into the ability to judge others (see also Bruner & Tagiuri, 1954; Taft, 1955). Allport concluded that:

It would be unreasonable ... to expect a judge of people to be uniformly successful in estimating every quality of every person ... It seems more of an error, however, to consider the ability entirely specific than to consider it entirely general. (p. 517)

Allport also differentiated between predictions associated with the average of a group (generalised other) and individuals. A number of later researchers have differentiated between perceiving persons and groups. Gage and Cronbach (1955) argued that the difference between what have been termed stereotype accuracy and differential accuracy was that:

the former refers to the individual’s ability to predict the pooled responses of a given category of persons, whereas the latter refers to his ability to differentiate among individuals within the category. (p. 417)

Cline and Richards (1960) found that judging the generalised other and sensitivity to individual differences were two components of accurate person perception but that they were independent (see also
Gage, 1952; Tagiuri, 1968). Being a good judge is seen to be based on having an "accurate stereotype", being able to "predict specific differences between individuals", or both (Cline & Richards, 1960, p. 5). Taft (1955) also expressed the view that "judgements may often be made correctly by using cultural stereotype responses without attempting to predict the responses of the particular [subject]" (p. 3). Stone, Gage and Leavitt (1957) found that the ability to judge individual differences and the ability to judge the generalised other were negatively correlated. In the next chapter the distinction between individuated and stereotypic impressions will be discussed in greater detail. It is clear that in terms of being able to judge others these two aspects of social perception are distinguished.

Evidence that the use of stereotypes could affect the ability to judge others is only one of the methodological issues raised by early person perception work. Research of the kind reviewed in this section declined substantially from the mid-fifties, mainly as a result of methodological difficulties, and in reaction to a paper by Cronbach (1955), to which we now turn.

2.3.3 Cronbach's critique of early person perception research

Cronbach published a paper in 1955 which had a significant impact on the direction of person perception work. The way that judges' ability to perceive others was assessed - the accuracy of the judgement - formed the basis of Cronbach's critique. As highlighted above, a number of different methods were used to measure the judge's inference and to measure factual information about the target person being perceived. A composite score which combined results across
various judgement measures was used to determine how well a judge could perceive the abilities of others. The overall discrepancy between a target’s description (the criterion) and a judge’s set of predictions (the judgement) formed the basis of the main accuracy score (Cronbach, 1955). Cronbach’s problem with this form of measurement was that “any index combining results from heterogeneous items presents serious difficulties in interpretation ... Effects which operate differently on the several factors may be masked” (1955, p. 178).

Cronbach went on to identify four components affecting the level and size of deviations which were ignored by the general accuracy score. Most of the issues concerned judges over- or underestimating a particular trait, generally across targets or in a constant direction. Cronbach (1958) stated that a number of factors needed to be taken into account including “the traits being perceived, the constant tendencies in this perceiver with respect to those traits and finally the effect of the particular other as a social stimulus to this perceiver” (p. 376-7).

Cronbach (1955) also made a number of recommendations for further investigation. He argued that there are two concerns in the study of perception - constant and variable processes. When the emphasis is on "interpreting the expressive cues [a person] presents the search is clearly for a variable process" (p. 190). The focus is on the judge’s sensitivity to individual difference. The judge is required to respond to the target as a stimulus and the fact "that the perceptual response also depends on stereotypes in the [judge’s] mind” (p. 190) is ignored. The constant processes are concerned with the "[judge's]
perceptual space, studied as a whole" which includes "information on his stereotype and his assumed dispersion" and also on the way "he organises the field of personality." (p. 191)

Cronbach (1955) argued that in order to understand the way we judge others we need to be aware of the constant aspects inherent in the perceiver which affect her or his judgement. For example, if a perceiver always overestimated the degree to which the target has particular traits then this is a constant variable associated with that perceiver. These constant person specific aspects of judgement can, in Cronbach's view, be identified, controlled and overcome. Cronbach (1955) clarified his position on constant and variable processes in person perception when he stated that:

Constant processes in the perceiver have potentially great importance because they affect all his acts of perception. Individual differences in constant processes need to be measured dependably so that their influence can be discounted in studies of variable processes. Moreover, identifying constant errors should permit training to eliminate such biases. (p. 190, emphasis in the original)

In this quotation an implicit but recurring theme in person perception research is explicitly stated. Cronbach is discussing mechanisms to calibrate person perception so that the same stimulus will elicit the same response across perceivers. Individual variations are seen as "errors" and "biases" which need to be "eliminated".

Similarities can be seen between Cronbach's argument and the following statement from Sarbin et al. (1960) which refers to the
implications of the perceiver (or analyst as described in clinical terms) and the perceived sharing the same context:

Not only does the analyst have to take into account any overt behavior which he might have elicited by his own presence or by his attempt to "pull" material from the object, but he must also try to take into account any controls that the object-person imposes upon his "normal" emission of acts. (p. 14, emphasis in the original)

The point is that the influence of the perceiver needs to be accounted for so the "normal" actions of the perceived can be observed. The message in both of these quotes is that factors which make human perception variable, perceiver-specific and situation-specific need to be identified, controlled and factored out of the impression formed in order to understand person perception. Person perception is, clearly, not understood as an interaction between people in a particular situation. Perceivers are not seen to have goals, motives or experiences which may form an integral part of the person perception process. Person perception is both theoretically and empirically interpreted as a process which should result in direct correspondence between the target and what is perceived.

The assumption that person perception was accurate if it converged on one, absolute standard impression of the stimulus person is rarely directly identified or discussed in the early person perception research. The main reason for this is that this assumption was inextricably enmeshed with the early work on person perception itself. However, the following comment on methodological difficulties by
Tagiuri (1958) alludes to this assumption:

> even though the problem of veridicality is fraught with enormous
difficulties the difficulties involved in defining **what the other**
person **is like** do not justify the complete evasion of the problem
of specifying the nature of the stimulus person. (p. xvi, emphasis
in the original)

The use of validated personality and intelligence tests, expert
judgements and ratings by those familiar to the target are also
testimony to the belief that accuracy is defined in terms of the stimulus
- the individual person. The assumption is that these measures will
provide an absolute standard against which to compare perceivers’
responses. If the judgement does not equate with the criterion then it
is the perceiver who is considered biased and distorted. The research
obsession with identifying a “good” judge also indicates that accuracy is
defined as being external to the perceiver. Meanwhile, broader
fundamental questions about the nature and role of person perception
are neglected. It is simply assumed that the perceiver is a passive
filter for information in the stimulus environment (Hilton & Darley,

The issue of accuracy raised in early person perception research
was eventually largely abandoned because of methodological
difficulties, and the focus shifted to an examination of the impression
formation process (see Chapter 3). A clear message of Cronbach’s
(1955) paper, which was heeded by some, was that conclusions based
on early person perception research needed to be interpreted with
cautions. However, research on the ability to judge others did continue
Researchers used different methods of assessing correspondence between the judgement and criterion, such as standardised scores and correlations as Cronbach suggested. Others have developed scores such as the interpersonal accuracy score and the refined difference score. Research also uses correlations and ranking methods (e.g., Cook & Smith, 1974). Another fruitful direction of research involved identifying perceivers’ specific implicit personality theories (Bruner & Tagiuri, 1954; see also Heider, 1958; Hamilton, Katz & Leirer, 1980, for a review).

However, Cronbach's (1955) paper does enable an assessment of the theoretical assumptions inherent in the research after Darwin's first experiments. A basis of this research was that there was a simple correspondence between the perceived and the perceiver. Because accuracy was defined in terms of the stimulus, factors inherent in human perception such as mutual influence and individual variability needed to be understood and restrained. However, these assumptions were starting to be challenged. For example, Gage and Cronbach (1955) identified a need to shift from focusing on the stimulus in person perception. They commented, "it seems at present we shall not need to go far to find the perceiver rather than the stimulus determining the perception" (Gage & Cronbach, 1955, p. 420-421; see also Tajfel, 1968). Indeed, the perceiver became the central focus of the "New Look" tradition in perception (Bruner, 1957a, 1957b) which is discussed in Chapter 5.

However, questions about the role of the perceiver in social perception were already being asked in other literatures. The focus in
stereotyping research, for example, was much more on the perceiver from the outset. Stereotypes were inherently seen as distorted representations which challenged researchers to explain why perception occurred in this way. The next section summarises the main developments and themes in early stereotyping research.

2.4 Early approaches to stereotyping

There are two significant points, from the perspective of this thesis, which emerge from early stereotyping research. The first is that it is in the stereotyping literature that significant developments are made regarding the role of the perceiver in social perception. The second point is that the stereotyping literature faces a constant paradox in trying to explain how stereotypes can be meaningful to the perceiver but also have such dramatic (usually negative) consequences for those that are stereotyped. A number of the early explanations seem to absolve the perceiver from the fact that they stereotype others. For example, stereotypes have been argued to be the unintentional product of a faulty cognitive mechanism.

Since stereotypes were first identified and studied they have generally been understood as distorted and erroneous perceptions of others, a view which still taints current impression formation models. In the work of Sherif and Asch important shifts occurred in the way stereotypes and the stereotyping process were understood. These shifts were instrumental in the development of a different understanding of social perception which is discussed in detail in Chapter 5. Given the relevance to current work, both the assumptions of distortion and the work of Sherif and Asch are outlined sequentially
in this section.

2.4.1 Are stereotypes distorted representations?

The notions of distortion, exaggeration and accentuation are common themes in stereotyping research. From the outset stereotypes have been seen to exaggerate reality. Lippmann, who originally defined stereotypes, wrote in his book *Public Opinion* that stereotypes:

mark out certain objects as familiar or strange, emphasising the difference, so that the slightly familiar is seen as very familiar, and the somewhat strange as sharply alien. (1922, p. 59)

Inherent in his work was the idea that stereotypes do not reflect reality. Lippmann also made an early statement of a still highly influential idea that individual person-based perception is the ideal. He argued that "there is no shortcut through, and no substitute for, an individualized understanding" (p. 59). The theme that stereotypes do not reflect, but exaggerate reality, has shaped stereotyping research. In particular, Lippmann's view that stereotypes were influenced by the biases of the stereotyper fuelled research in this area.

Initial investigations concerned the content of stereotypes and whether stereotypes were based on "objective" fact (see Oakes et al., 1994, Chapter 2 for a review). As in person perception research, a common tool was to have subjects assess photographs and describe their impressions (Rice, 1926-7; Litterer, 1933). The use of photographs was thought to minimise the influence of the perceiver on the perceived. Typically subjects matched the depiction with "social types" and attributed personality characteristics on this basis. Rice
used nine photographs selected from newspapers and asked subjects to match each of the photographs to one of nine labels (e.g., a Labor leader, a European premier, a manufacturer). The findings indicated that subjects successfully matched the picture and the label at a rate better than chance. Further, even when the match was incorrect there was a high degree of agreement between subjects. Depictions were found to be rated differently depending on whether they were identified correctly or not. Rice concluded that the results supported the "existence of common stereotypes concerning the appearance of various classes of persons" (1928, p. 67).

Another study which looked at the impact of stereotypes on impressions was conducted by Razran (1950). Subjects had to rate thirty photographs of ethnically ambiguous women on a number of personality and behavioural dimensions. The process was repeated two months later, but this time the photographs were labelled with last names which connoted ethnic group membership (surnames such as O'Brien, d'Angelo, Rabinowitz). The labelling of the photographs drastically affected the impressions of the women's character with the development of more stereotypic responses.

A more "real life" technique to investigate stereotype content was used by LaPiere (1936) who like others was interested in whether objective evidence justified stereotypic beliefs. He investigated whether the prevailing stereotype held by Californians in Fresno County of the Armenians (that they were "dishonest, lying, deceitful") matched the "facts". Results were that Armenians' credit ratings were found to be equivalent to those of other groups, while they were less
likely to receive charity and appear in court cases.

Evidence that stereotypes, as Lippmann had argued, did not reflect absolute facts about groups was also provided by studies such as that by Shrieke (1936). Shrieke assessed how the American Chinese were represented at two points in time. During the prosperous time following the civil-war American Chinese were represented as "'thrifty', 'sober', 'tractable', 'inoffensive', 'law-abiding'" but later leading into the depression (1869-73) they were portrayed as "'clannish', 'dangerous', ... 'criminal', 'secretive', ...'debased' and 'servile'" (p. 11). It was suggested that these results indicated the inaccuracy of stereotypes because it was unlikely that the character of the Chinese had in effect changed so dramatically (e.g., Harding, Kutner, Proshansky & Chein, 1954; Klineberg, 1951). However, the results of studies such as Shrieke’s can also be interpreted as reflecting the relationship between stereotypes and intergroup relations (see page 25 of this chapter).

Throughout the 1950s researchers began to conclude, on the basis of studies like those above, that there was limited evidence to support stereotypes having a factual basis. The two following quotations are typical of the attitude at the time. Schoenfield (1942) stated "to the extent that a stereotype corresponds to objective facts, it is not a stereotype at all" (p. 12). Zawadzki (1942) made a very clear assertion that stereotypes do not correspond with known facts about groups in the following comment:

The stereotype as a concept of what is a typical member of a group is a very poor device in thinking ... [T]raits are selected, not because they are actually most often found among members
of the group, but because they serve best the malicious intent of ridiculing or discrediting the group. (p. 130)

The recognition that stereotypes did not "reflect objective facts" and were a "poor" way of thinking, motivated researchers towards trying to understand the process responsible for such erroneous representations. Stereotypes were widely considered to be the product of a "faulty process" (Fishman, 1956), the result of an "inferior judgement process" (Bogardus, 1950; Hayakawa, 1950). The typical view is reflected in the position of Centers (1951) who argued that stereotypes "constitute one of the clearest examples we have of socially and culturally acquired cognitive structures which shape perception and thought in their own distorted image" (p. 41). Also in this vein, Fishman (1956) stated that "the oldest and still the most widely ascribed attribute of stereotypes is their alleged content of error and distortion" (p. 28).

Ways to counteract this faulty process became the focus of research. If the nature and extent of the distortion inherent in stereotypes could be identified, it was believed possible to develop mechanisms designed to overcome stereotype deficiency. There was a strong belief among researchers at this time that it was necessary to determine the "objective" characteristics of different groups. These facts could then provide a base from which to assess stereotype deficiencies and better understand the processes involved. In line with this new mentality Klineberg (1951) stated that "every stereotype must be examined in order to determine its relation to objective reality" (p. 51). Fishman (1956) clearly articulated a need for a "scientific study of
national character" which would provide a mechanism "to study the incidence of 'kernels of truths' in the stereotypes subscribed to by various populations" (p. 29-30). Fishman wanted to see the development of reliable data concerning "the dominant personality clusters, the values, customs and goals of the peoples of the world, according to age, sex, educational, occupational, and other pertinent breakdowns" (1956, p. 29-30).

So around the 1950s two messages emerged in social perception research. In terms of person perception, Cronbach argued that factors which caused perceivers to vary in their impressions should be identified and overcome. In stereotyping research there was a move to measure the objective characteristics of groups so distortions by perceivers, their stereotypes, could be identified and understood. At this time the idea of correspondence between stimulus and perceiver, and the associated assumption that all perceivers should see the world in the same way, was a major, if implicit theme in social perception. Researchers were trying to identify the variables which distort the reception of stimulus information so that these distortions could be minimised.

By the 1960s there was widespread agreement that the task of assessing stereotype validity was far more difficult than researchers like Fishman had envisaged. A number of studies had generated mixed findings regarding the "kernel of truth" hypothesis, and identification of the real characteristics of groups was difficult and ill conceived. Some research demonstrated that stereotypes did have some validity and others concluded the contrary (see Oakes et al., 1994
for a review; Oakes & Reynolds, 1997). The research is characterised by conditional appraisals like Schuman's (1966) assessment that stereotypes have a greater chance of being accurate if they are favourable and refer to a group which is stable over time. Likewise, Triandis and Vassiliou (1967) concluded that "there is a 'kernel of truth' in most stereotypes when they are elicited from people who have first hand knowledge of the group being stereotyped" (p. 324).

At the end of the 1960s many issues remained unresolved concerning the nature of stereotypes. However, there was wide support for the view that stereotypes were distorted images which misrepresented others. Stereotypes were also understood to be the product of a faulty process which in order to deal with complexity focused on simplification. Research in this vein expanded with the movement towards understanding cognitive processes in social perception (see Chapter 4).

In this early period questions about the content of stereotypes, the existence of a kernel of truth and the related notion of establishing objective, group information were not the only focus of stereotyping researchers. A minority of researchers were disputing the dissociation between stereotypes and reality. Researchers like Asch and Sherif, argued that stereotypes may be valid representations.

2.4.2 Stereotypes as valid representations

There was some evidence that stereotypes could vary in relation to real world events. For some researchers, such as Asch and Sherif, the suggestion that stereotypes were based on the relationships
between groups raised questions about whether stereotypes were distorted. Aspects of their theoretical analyses will be outlined, analyses in which the role of the perceiver in the stereotyping process is explicitly recognised. First, a number of studies which indicated the dynamic nature of stereotypes and stereotype content are described.

A relationship between the content of stereotypes and the nature of group interaction was observed by a number of researchers. For example, Seago (1947) assessed the stereotypes Americans had of the Japanese, Americans, Germans and Negroes throughout the main years of WWII from 1941 to 1945. While the stereotypes of the Americans and Negroes were relatively stable over this period those of the Germans and Japanese changed considerably. Prothro and Melikian's (1955) study provided further evidence of stereotypes changing with changes in intergroup relations. They examined the stereotypes Arab students had of Americans at the University of Beirut at a time when American presence in the city was increasing. Americans were seen as more sociable and superficial while interestingly, the content of stereotypes associated with other groups did not significantly change. At a time when there was a border dispute between China and India there was also evidence that the Indians' stereotype of the Chinese in particular changed (Sinha & Upadhyaya, 1960). Chinese who were up until that time seen as artistic, industrious and friendly were then perceived as aggressive, selfish and cruel.

The link between stereotypes and intergroup relations was also solidified through Sherif's boys' camp studies (Sherif, 1961, 1967). A
summer camp, attended by Grade 11 and 12 boys, was the setting for a number of studies. The boys were screened to be from stable families and of similar racial, religious and class backgrounds. As part of the camp activities they participated in three experimental phases: group formation, intergroup conflict and conflict reduction.

At the time of arrival the boys were separated into two groups where norms and different cultures soon developed in each group. Competitive interaction between the groups was planned to facilitate increased levels of intergroup conflict. The groups had to compete for a goal which both groups valued. Negative attitudes developed quickly leading Sherif to conclude that the "existence of two groups competing for goals that only one group could attain" (1967, p. 85) was sufficient for the formation of negative stereotypes to develop. In the conflict reduction phase a number of activities were designed where the groups had to work together to achieve the desired outcome. Through the introduction of superordinate goals Sherif was able to show change in the content of stereotypes and a reduction of prejudice.

Sherif formulated a theory of intergroup relations in which stereotypes were seen as "images shared ... by large numbers of persons belonging to the same human groupings" (Sherif, 1967, p. 234). He did not accept the view that stereotypes were false or wrong because he believed this "evades the issue of stereotype formation by definition" (p. 23). Sherif's findings suggest that stereotypes are not inevitably fixed or rigid but flexible, reflecting the relationship between groups. He also emphasised the relative nature of stereotypes when he argued that the stereotypes of other groups will be shaped by the way
people define themselves and their own group's values.

The boys' camp studies also provided evidence that "normal" schoolboys could develop negative stereotypes about, and show prejudice towards, other people as a result of intergroup conflict. Sherif was not only able to provide an explanation of the way stereotypes are cultivated and changed but he also developed a theoretical understanding of stereotyping. Asch (1952) was another researcher at the time who developed a distinct, comprehensive theory of impression formation. An overview is provided here; the detail of his models will be discussed in the next chapter.

Asch, like Sherif, argued against the view of stereotypes as distorted representations. He argued that there was evidence that stereotypes both were and were not factually based. In some instances there was evidence of a "kernel of truth", and Asch suggested that to the extent that there is evidence of validity it is incorrect to use the term "stereotype" because it incorporates an intrinsic assumption "that every view of groups is subjective and wrong. Instead of asking how inadequate social ideas are formed the investigations emphasise the fact that they are inadequate and conclude feebly that it is the product of an inherent tendency in individuals" (Asch, 1952, p. 234).

Asch, endeavoured to answer a different question about stereotypes which distinguished him from many of his peers. Instead of accepting that stereotypes were the product of a faulty process, Asch emphasised the need to assess the conditions that "further or hamper the growth of adequate views" (1952, p. 235; see also Vinacke, 1956,
1957). Importantly, the process of forming impressions of complex groups was seen to be "a process quite similar in certain respects to forming impressions of persons" (1952, p. 234). Asch also endorsed the validity of forming impressions of others based on their group membership:

Observing the distortion that follows from merging individuals with their groups, some have counseled that it is misleading to judge persons in terms of group relations and that the canons of objectivity require of us to understand persons first and foremost as individuals. It is correct to urge that we should strive to see persons in their uniqueness. But it is wrong to assume that we can best achieve a correct view of a person by ignoring his group relations. (p. 238)

Within the stereotyping literature from the outset there has been a belief that we should "understand persons first and foremost as individuals" and that to form impressions of others in terms of their group memberships is "misleading" because stereotyping is an "inferior judgement processes". Stereotypes have been explained as helpful mechanisms to deal with a complex world. The idea that simplification equals distortion was questioned by Asch (1952, p. 235):

Simplified impressions are a first step toward understanding the surrounding and towards establishing clear, meaningful views. Simplification often helps us to see an entire situation clearly, to overcome the bewilderment and confusion of numerous detail.

Asch's views regarding impression formation and stereotyping were not widely accepted and the idea that stereotypes were the product of a faulty process continued to be widely embraced. Research
examining issues of error and distortion merged with a shift in focus in
the 1960s and 1970s towards a cognitive approach to stereotyping. A
recognition that simplification and distortion were not the product of a
faulty process but a necessary product of the cognitive system emerged.
These assumptions form the basis of current impression formation
models and will be explored in detail in the next chapter.

2.5 Conclusions

This chapter has explored early approaches to social perception,
including both person perception and stereotyping research. Social
perception research generally has been shaped by assumptions
associated with the differentiation between object and person
perception. Three areas of person perception research were discussed:
recognition of emotion, ability to judge others and Cronbach’s critique.
Initially, research questions and methods of investigation in person
perception built upon Darwin’s theoretical ideas about recognition of
emotion, biological determinism and the fact that the stimulus drives
the perception process.

Interest in the second area, our ability to judge others, and
evidence that this ability was not homogeneous, generated a greater
awareness of the role of the perceiver in person perception. However,
underlying questions about "accurate" impression formation,
particularly whether accuracy should be exclusively defined in terms of
the individual person, were never explicitly asked or addressed.
Instead it was argued by researchers like Cronbach that influences
inherent in the perceiver ("biases" and "errors") needed to be identified
so they could be controlled and factored into understanding our
perceptions of others. Information about the individual person, "out there" independent of the perceiver, is unquestionably seen as accurate. Person perception is defined in terms of the "character of the beheld".

The issue of bias and misrepresentation is also evident throughout the early stereotyping work. Stereotypes themselves were defined as simplified representations of others, as "pictures in our heads that are essentially incorrect, inaccurate, contrary to fact, and, therefore, undesirable" (Fishman, 1956, p. 28). Stereotypes were clearly recognised as being "in the eye of the beholder" (Dornbusch, Hastorf, Richardson, Muzzy & Vreeland, 1965; Miller, 1982). Evidence that stereotypes changed when the relationship between groups changed challenged the view that stereotypes were entirely "contrary to fact" and a different interpretation of the stereotyping process emerged. Perception and representation of these group differences were not viewed as inherently "inaccurate" but as potentially valid and meaningful. The challenge in social perception is to explain how stereotypes can be valid but at times so disagreeable.

In summary, this chapter has reviewed evidence that accurate impressions are understood as those that correspond to a defined measure of a particular individual. The predominate view of stereotypes in this early research was that they were distorted and simplified representations of others. Both these themes reflect an individualistic analysis of social perception, where social perception is defined in terms of the individual and the reality of groups is denied. These themes are reflected in the impression formation models
detailed in the next chapter.

In this chapter a minority view regarding the validity of stereotypes as the meaningful representation of groups was also outlined. This research is revisited when an alternative view of impression formation and social perception is developed and elaborated in Chapter 5. It becomes clear that the early social perception research has coloured and shaped a variety of current perspectives.
3.1 Introduction

In the previous chapter, two of the three aspects in mainstream person perception research were outlined: recognition of emotion and ability to judge others accurately. In this chapter a third area, characterised by an emphasis on the impression formation process, is the focus. Importantly, subsequent to Cronbach's critique of the person perception literature there was a shift in the type of research questions that were investigated, such that the way in which we form impression of others and consolidate complexities into unified impressions became central issues.

A number of models have been developed which attempt to address the impression formation process. Two of the more popular earlier models of impression formation were Asch's (1946) configural model and Anderson's (e.g., 1974) weighted averages model. The central issue which differentiated these models and framed much of the subsequent research was whether or not information about people's characteristics had meaning independent of contextual factors, such as the other information available to the perceiver. For example, does our impression of the attribute "closeknit" vary depending on whether we
are describing an Australian or Vietnamese family? Does "polite" mean something different when describing a hotel employee or doctor? Often when we form impressions of others we take into account many different pieces of information, which may impact on each other. For example, is our impression of someone who is artistic also influenced by the fact that we know they are, on the one hand, unruly and rash or on the other, tolerant and responsible? Whether or not contextual factors affect impression formation is probably the most widely investigated question in the impression formation literature and is a question fundamental to how categorization and social cognition are understood.

As will be seen in the progression of this chapter most of the impression formation research in the 1970s was directed at asserting either the Asch or the Anderson explanation of the impression formation process over the other. Eventually some researchers attempted to settle the debate by arguing that both models could be relevant to different impression formation situations. These developments have led to the current state of affairs where both Asch's and Anderson's work are generally incorporated in contemporary models of impression formation. These modern integrations have also built on some of the underlying issues and assumptions inherent in these earlier models. For this reason Asch's and Anderson's work is reviewed in detail before two contemporary impression formation models are outlined - Fiske and Neuberg's (1990) continuum model and Brewer's (1988) dual process model.

Both of these modern integrations by Brewer (1988) and Fiske
and Neuberg (1990) propose two impression formation processes, one used when stereotypic impressions are formed and another thought to underlie individuated impression formation. Asch's work is drawn on to support the former, where a stereotype or category label is used to shape the impression and interpret other available information. Anderson initially investigated whether attributes had value and meaning independent of contextual factors and this aspect of his work has been drawn on to support the view that individuated impressions can be formed through the isolated summation of independent traits. Controversy surrounds the issue of whether such a categorization-free impression formation process exists, in which attributes are combined in isolation in an attribute-by-attribute manner. For this reason it is the evidence cited to support such a categorization-free process which receives the most detailed attention in this chapter. The chapter concludes with a broader analysis of whether impressions can be formed through the isolated categorization-free summation of information about others. Assumptions regarding the categorization process are discussed in more detail in the next chapter.

3.2 Impression formation and the meaning change debate

A large proportion of research in the impression formation area has focused on whether traits change their meaning in relation to the other traits with which they are compared. Most of this research draws on Asch's configural model and Anderson's weighted averages model. Both Asch's and Anderson's work is reviewed prior to a discussion of more recent developments in the impression formation literature.
3.2.1 The Configural model

One of the most influential pieces of research on social perception and impression formation was conducted by Asch (1946), and reported in an article titled "Forming impressions of personality." In this article three ways of describing the process of impression formation were highlighted: 1) the elemental view; 2) use of a general impression; and 3) the configural model.

The first, the "elemental view" is where an impression is formed through the summation of the independent impressions formed of particular traits. An impression of a person could be described in terms of the summation of the impression of friendly plus the impression of courteous plus the impression of superficial and so on (Asch, 1946 p. 259). In other words, the impressions from each of the traits are combined in isolation. The assumption underlying this elemental view is that friendly or courteous or superficial can have some sort of fixed, context independent meaning. Asch (1952) suggested that although the elemental position was important in the thinking of the time it was "doubtful that any psychologist would at present defend this position in its strict form" (p. 207).

The second method of impression formation outlined by Asch (1946) was also fundamentally elemental in nature. In addition to the summation of individual traits it included the influence of a general impression. The general impression is seen as an "affective force possessing a plus or minus direction which shifts the evaluation of the several traits" (p. 259). So the general impression can affect the direction of the impression and therefore can influence how particular
traits are interpreted. Asch points out that the general impression in this model is often interpreted as a source of error in the impression formation process which "should be supplanted by the attitude of judging each trait in isolation" (p. 260). This model is underpinned by an assumption that the true impression of a particular trait is one made in the abstract and in isolation.

The third model Asch (1946) described was labelled the "Gestalt formulation" or "configural model", and was clearly distinct from the elemental position. From this perspective an impression is based on the relationship among traits and the final impression goes beyond the information given, beyond impressions formed from the separate traits: "we see a person consisting not of these and those independent traits ... but we try to get to the root of the personality. This would involve that the traits are perceived in relation to each other" (p. 259). There is an emphasis on forming an holistic impression of the entire person. Asch was interested in the Gestalt perspective, specifically how one developed an integrated impression of a person formed from several, perhaps discordant, characteristics. Later Asch emphasised that the premise underlying all impression formation was a belief that people are psychological units and that resolving conflict or discordant information only made sense in terms of this background of anticipated unity (Asch & Zukier, 1984; see also Hamilton & Sherman, 1996).

Asch's (1946) research supported the configural model and the methodology he used has been widely replicated in a range of impression formation studies. A typical method is to provide subjects with a list of adjectives which supposedly describe a particular person.
or group. The use of trait lists is often disassociated from the message of Asch's research that the "characteristics forming the basis of an impression do not contribute each a fixed, independent meaning, but that their content is itself partly a function of the environment of the other characteristics, of their mutual relations" (p. 268).

In Asch's (1946) studies subjects were asked to listen carefully as the list of adjectives was read aloud and to form an impression of the person described. The characteristics read to the subjects were systematically varied across conditions and comparisons were made between the impressions formed by each of the groups. Asch commonly used two kinds of tasks to assess the impact of traits on the impression formed of a particular person. One task involved subjects writing a characterisation of the person in a few sentences. The other task used a checklist of eighteen opposing adjective pairs (e.g., shrewd-wise) of which subjects had to select, from each pair, the adjective which was consistent with their impression of the person.

In one of Asch's (1946) studies one group of subjects was given the trait list: intelligent, skilful, industrious, warm, determined, practical, cautious. Another group, in the same study, was given an identical list except the word "cold" was substituted for the word "warm". In another experiment exactly the same trait list was presented to subjects except in one condition the traits were given in the reverse order. In conditions where "warm" was included as a descriptive trait, impressions were more positive both in terms of the written descriptions and the traits selected from the trait list. Asch concluded that "these results show that a change in one character-
quality has produced a widespread change in the entire impression" (1946, p. 264). Asch also found that the order of word presentation affected the overall impression; "the first terms set up in most subjects a direction which then exerts a continuous effect on the latter terms" (p. 271, emphasis in the original).

Kelley (1950) replicated Asch's (1946) "warm-cold" study, replacing the trait lists with an actual person. A class of students were given information about a new instructor. This information was held constant, except that the instructor was described as a "very warm person" to half the class and to the other half of the class he was described as "rather cold". The instructor then engaged in a 20 minute discussion with the subjects. After the discussion subjects had to write a description of the instructor and complete a checklist compiled from 15 traits. The results supported Asch's (1946) results with very different descriptions being formed by the two groups. The instructor was described in more positive terms as more sociable, polite and humorous by those subjects who had received the description "very warm person" compared with those who had received the description "rather cold".

The findings from these types of studies led Asch to believe that there were central and peripheral traits and that some traits could influence the interpretation of others. For example, and based on results from a number of studies, warm and cold were argued to be central traits. Additional findings can be summarised as follows: 1) subjects attempt to integrate the characteristics to form an impression of the whole person; 2) the integration of traits leads to an impression.
which is more than the sum of its parts (i.e., the words provided); 3) not all the traits weigh equally in the impression formation process; 4) central traits set the direction of the impression and shape the interpretation of the peripheral traits; 5) the same trait could be central for one impression and peripheral for another, indicating that context affects the impression formation process (Asch, 1946).

The most controversial finding based on Asch's (1946) configurational analysis was that forming an impression did not involve an assessment of each trait separately but that some traits - central traits - were used to make sense of other traits - peripheral traits (see also Asch & Zukier, 1984). The configural model is supported by these findings and at the same time they are inconsistent with the elemental perspective. The issue of meaning change is fundamental to how the person perception process is understood. What does it mean to say someone is tough - does it mean they are physically strong and brutal or does it mean that they are able to make hard decisions? Would the perceiver be wrong if they interpreted tough as meaning "brutal" if they also knew that the person was aggressive, or to mean "making hard decisions" if they also knew the person was a company director? The answers to these questions depend on whether impression formation is seen as: 1) a matching process between an abstract definition and the impression the perceiver forms or 2) a dynamic interaction between the perceived and perceiver where meaning is derived from relative judgements dependent on contextual factors.

The evidence presented by Asch is consistent with the latter answer and suggests that impression formation is a dynamic process.
However, although some authors support Asch's "shift in meaning" explanation, others have developed alternative analyses to account for meaning change. For example, "attention decrement" (Stewart, 1965), "discounting" of information (Anderson & Jacobson, 1965) and the halo explanation, where meaning is affected by the positivity or negativity of former words (Anderson & Lampel, 1965), have been proposed. Many of these alternative perspectives stem from the work of N. H. Anderson and are associated with the development of information integration theory. Information integration theory incorporates a weighted averages model which can be seen as a more modern incarnation of the elemental perspective articulated by Asch (1946).

3.2.2 Information Integration theory

Information integration theory builds on the elemental model and offers an alternative mechanism of impression formation to Asch's configural approach. Anderson's work is used to support the view that impressions can be formed in a non-categorical attribute-by-attribute way. Statements like "people form impressions by combining (adding, averaging or otherwise) the isolated characteristics of the individual" (Fiske & Neuberg, 1989, p. 83) are followed by reference to Anderson's work.

Information integration theory views the perceiver as an integrator of information where stimuli are combined or integrated to produce a response. Much of the research associated with the theory has involved person perception because it provides a good example of the integration process (Anderson, 1974). Three basic aspects of the model are valuation, integration and assemblage. Valuation refers to
the processes associated with defining the stimulus parameters. Integration, as its name suggests, involves the process of combining stimuli to form an overall response (Anderson, 1974). Information attained through valuation and integration are combined through a process of construction known as assemblage (Anderson, 1988). Algebraic models are used to describe the integration process and predictions made by the model are compared with subjects' actual responses. Generally, mathematical models are not intended to describe what people are actually doing when they form impressions but may be best understood as predicting the outcome of a particular psychological process (Kashima & Kerekes, 1994).

Anderson (1965) initially used algebraic models to compare two methods by which trait information could be combined to form impressions of others, through summation or averaging. The "additive model" equates with Asch's elemental model and involves the summation of traits. Each trait has a particular value which it contributes to the impression regardless of the other information available. Because the model is additive, when more information is available to the perceiver, the impression of the target should be more favourable.

The "averaging model" involves the averaging of trait information so a trait can influence the overall impression differently depending on the other information available. If a trait is added which is more or less favourable in comparison to other traits the overall impression will be affected. For example if the traits "intelligent", "humorous" and "friendly" were all rated as being highly favourable
and were combined with the trait "aggressive" which was rated as less favourable the overall impression of the target would be less positive (Zebrowitz, 1990; see Kashima & Kerekes, 1994, for a more recent discussion of the averaging phenomena).

Anderson (1965) developed a model to test both these accounts of impression formation. Two highly favourable traits (HH) were evaluated with two mildly favourable traits (M+M+). The additive model would predict that the evaluation of HHM+M+ would be more favourable than the HH evaluation because there is more positive information being used in impression formation. The averages model would predict that HHM+M+ would be evaluated less favourably than HH because the average value of the stimulus information would be reduced (Anderson, 1974). The results supported an averages model and the effect has been widely replicated (e.g., Anderson & Lampel, 1965; Kaplan, 1971).

However, Anderson also found that a stimulus person described by four positive traits (HHHH) was not evaluated as positively as a person described by two positive traits (HH). This finding does not support the averages model because the average of four positive traits should be the same as the average of two positive traits. Anderson explained this finding by arguing that people start with an initial impression which becomes more positive or negative depending on the average of positive and negative stimuli (Hastorf et al., 1970). Asch (1946) as outlined above, also pointed out that in addition to the elemental summation of traits some researchers argued that a "general impression" could affect the direction in which particular traits are
evaluated. The initial or general impression is argued to influence the interpretation of traits which describe a particular stimulus person.

In order to further investigate the averages model Anderson (1971) used the likeability ratings of 555 traits which he had published in 1968 and examined the contribution of traits to the overall likeability of a particular impression. The results indicated that the favourableness of a particular trait was not constant across presentation situations. In response to such findings Anderson extended the role of the initial impression to develop the weighted averages model. The contribution of a particular trait to the impression was argued to be weighted according to the trait's context-free likeableness scale value and the overall likeability of the stimulus person (Hamilton & Zanna, 1974).

The weighted averages model reflects a significant development in the impression formation literature because there is evidence from both Asch's and Anderson's research which refutes the pure elemental model. Both models recognise that the overall impression can impact on the component trait information. The meaning a particular trait will have is determined by the overall impression in the configural approach, and the overall impression determines part of the trait weight in the weighted averages model. In effect, both Asch and Anderson argued that attributes cannot be summed or averaged in isolation and that contextual factors do impact on the way an attribute is evaluated.

However, there is still a major distinction between the configural
and weighted averages models. Asch (1946) argued that the actual meaning of a particular trait could change depending on the other information available and the overall impression of the person. In contrast, the weighted averages model suggested that the trait weight could increase or decrease in value on a single dimension depending on the overall impression (Hinton, 1993). The weighted averages model maintains that traits have context-free value and that the overall impression only influences the general likeability.

A stream of articles in the 1970s pitted Anderson's and Asch's work against one another trying to discover how we form impressions of others and whether there is such a phenomenon as meaning change. Titles of papers like "weighted averages versus the meaning-change formulation", "two more tests against meaning change", and "further evidence for meaning change" express the research atmosphere (Ostrom, 1977). Change in connotative meaning was clearly the issue which differentiated the two models most and was the basis of much of the research. Because of the central role of the overall impression in both models researchers experienced immense difficulty devising a critical test to distinguish these theories empirically.

Changes in the extent to which a particular trait was liked has been the main measure of whether there is actual meaning change or not in impression formation (for an exception see Hamilton & Zanna, 1974). Researchers like Wyer and Watson (1969) and Kaplan (1971) reasoned that there would be more evidence of context effects and meaning change for traits which had a variety of meanings. Traits which had a high variability in their likeability ratings were compared
with those traits with less variability. Anderson's (1968) ratings of traits were used to determine variability in these studies. Kaplan (1971) reported that traits high and low in variability were affected by context in the same way.

Another method used to compare the meaning change and weighted averages model was to get some subjects to write a description of their impression prior to rating component traits on likeability (Anderson, 1971). Subjects who documented their impression were argued to have a more integrated impression than those subjects who were not required to do so. An enhanced context effect was expected in the former condition but in fact no differences were found across conditions. This may indicate that subjects can form integrated impressions without written description or, alternatively, it may provide support for the weighted averages interpretation because similar impressions were formed across conditions (Hamilton & Zanna, 1974). The lack of manipulation checks makes it difficult to interpret the findings. Anderson (1971) also increased the size of the context, comparing likeability ratings with six or two traits. The context effect was larger when there were more traits, a finding which potentially can be interpreted as providing support for meaning change or the weighted averages models.

Research focused on meaning change petered out, in part because it had "failed to establish either one as preferable, for both theoretical and methodological reasons" (Fiske & Pavelchak, 1986, p. 169). After concentrated research comparing predictions from each model the evidence was inconclusive. Hamilton et al. (1980) argued
that research associated with Asch's and Anderson's theories focused on different questions. Asch was interested in how we form an integrated impression of another person. Anderson's focus was on evaluating mathematical models of information integration and dependent measures such as the likeability of traits reflected this aim. Although Asch's initial methodology provided a framework in which to assess algebraic models the overall aims of Asch's and Anderson's work were very different.

Ostrom (1977) also concluded that the models focused on different aspects of the impression formation process, and that the adversarial approach was futile. However, he did argue, that a case could be made for summation/averaging and configuration operating in different circumstances where different information was available. This suggestion by Ostrom that both models had something to offer understandings of the impression formation process contributed to the argument that impressions may be based on two methods of social information processing. Fiske and Pavelchak (1986), citing Ostrom, concluded that "both models are applicable under certain specifiable circumstances" (p. 169).

In summary, the idea that there are two distinct methods by which we can form impressions of others originated in Asch's 1946 article. The issue of whether we form impressions in a configural, Gestalt fashion or in an elemental manner was not resolved despite a decade of intense research. The research itself was shaped by different research aims and agendas, but the influence of the initial or overall impression was recognised and made explicit in Anderson's weighted
averages model and Asch's research. In current models of impression formation it is argued that there are two impression formation processes, one based on the tradition of Asch's work and the other on the elemental model subsequently developed by Anderson. We next turn to an overview of these modern integrations, in particular the emphasis on a categorization-free, elemental process and related research.

3.3 Elemental and configural models: Modern integrations

Two of the current models of impression formation, Fiske and Neuberg's continuum model and Brewer's (1988) dual process model, combine elemental and configural perspectives. The unresolved differences between these earlier perspectives have merely been transferred to the current models as an argument for two distinct impression formation processes. Fiske (1988) stated in reference to the continuum model that it "proposes that people engage in both holistic and elemental processing, proposing a continuum between them" (p. 65) and in response to the question "Do people form impressions based on the overall Gestalt of the person or based on the attributes as isolated elements?" Fiske (1988) argued that "people do both" (p. 65).

Both Fiske and Neuberg's (1990) and Brewer's (1988) model describe impression formation processes which originate in research by Anderson and Asch. Asch's work is used to support the idea of category-based impressions where the category shapes the meaning of available information. The elemental model where traits are combined in isolation, in a categorization-free manner, is argued to be the process responsible for attribute-based individuated impression
formation. The elemental stage of Fiske and Neuberg's (1990) continuum model is termed piecemeal integration or attribute-based processing. Brewer (1988), in her dual process model, refers to this stage as personalization or bottom-up processing.

Importantly, in current impression formation models a further link is made between, on the one hand, Asch's work, categorization and stereotyping and on the other, Anderson's work, a categorization-free process and individuation. Fiske and Neuberg (1990) and Brewer (1988) use category-based or top-down processes as synonyms for stereotyping. Also importantly, when they argue for attribute-based or bottom-up impressions in terms of the piecemeal integration and personalization stages of their respective models they mean individuated impressions. This line of argument is explicit and integrated with their theoretical interpretation of the categorization process.

In an article by Fiske and Neuberg (1989) where the continuum model is discussed, they refer to processes "that heavily utilise social category information to the relative exclusion of an individual's other characteristics - as stereotype-oriented or category-based processes" (p. 83, emphasis in original). Further processes which "heavily utilize an individual's characteristics to the relative exclusion of an individual's social category" are referred to "as attribute-oriented or individuating processes" (p. 83, emphasis in original). In the context of discussing the dual-process model and early incarnations of the continuum model Brewer (1988) stated that the distinction between top-down and bottom-up processing parallels that "made by Fiske and Pavelchak
(1986) between category-based and piecemeal-based affect" she adds that the "present [dual-process] model also expands on the basic distinction between category-based and piecemeal processing by postulating different stages of category-based processing" (p. 6).

Further in reference to both the continuum and dual process models Fiske (1988) argued that "each model proposes that perceivers can form impressions both in stereotypic, category-oriented ways and in more individuated, attribute-oriented ways" (p. 65). This same argument is reflected in more recent work. In a 1993(b) paper Fiske stated that "category-based or stereotypic responses contrast with fully individuated, attribute-by-attribute considerations of another person" (p. 623).

The remainder of this section describes both models in detail and outlines the evidence drawn on to support the controversial elemental stages of each. There is consensus in the literature that impressions can be formed through categorization processes. What is contested though, is whether a distinct categorization-free process is used when we individuate others. For this reason a closer examination of the research relied on to support personalization and piecemeal integration is provided.

Overall, the continuum and dual process models seem to be more directed at first impressions rather than how we sometimes perceive others we know well in more stereotypic or individuated ways. In fact the impression formation literature generally could be characterised as theory and research based on one-off impressions of strangers. A point
to consider is whether impression formation does concern the whole person or whether it is the explanation of specific behaviours which focuses our thinking about others (see Hampson, 1988). The perceiver is also typically characterised in these recent models as a passive information processor in much the same way as the early person perception literature characterised the perceiver (Ellemers & van Knippenberg, 1997; Jones, 1988, 1990).

3.3.1 Dual process model

Brewer (1988) in her dual process model proposes "an alternative model of social cognition that incorporates top-down processing as well as data-driven constructions" (p. 2). She draws a clear distinction between these two forms of social information processing by proposing a dichotomy that represents category-based and person-based perception as mutually exclusive. The model begins with initial identification which is seen as an automatic categorization process; "the process is one of placing the individual social object along well established stimulus dimensions such as gender, age and skin color" (p. 6). There needs to be a degree of relevance between the stimulus person and the perceiver for impression formation to continue through more controlled and conscious processes.

If the stimulus person is relevant to the current needs and goals of the perceiver then there are two alternative branches through which the perception process can progress. One branch involves category-based perception, which involves theory-driven or top-down processing, and the other branch comprises person-based perception which involves bottom-up or data-driven processing. As will be seen, the
processes which operate at each branch of the dichotomy are distinct.

If the perceiver does not feel self-involved with the target the category-based branch is pursued and the basis of impression formation is categorization. Through the categorization process a match is made between the person being perceived and information stored in memory about particular "person types". The category matching process operates from the general to the specific and motivation and attention can influence the process (Brewer, 1988).

The activation of a particular category stored in memory is determined by three factors: the accessibility of the category, contextual cues and the perceiver's goals. If no fit is established, that is, when stimulus information is inconsistent with category prototypes, the category-based process moves through to an individuation stage. At the individuation stage the process involved is still categorization but the information is stored as a special instance of a category. A special instance is where the stimulus characteristics do not fit into the general category but are more like that category than any other category. The individuation stage is still category-based because features are defined and understood in terms of the general category (Brewer, 1988).

If the perceiver feels involved with the stimulus person, for example "the perceiver feels closely related to or interdependent with the target person" (Brewer, 1988, p. 9), then perception will be person-based or personalised. Person-based perception encompasses the other branch of the model and is a separate and unrelated process to
category-based perception. This branch represents personalization and the difference between this stage and category-based perception is that categorization is not the underlying process of impression formation. The individual rather than the category forms the framework for information organisation. Brewer (1988) argued that the category membership information is integrated as an aspect of the individual. Information characteristic of the individual in a particular category role is integrated, not the general category features. Brewer draws a distinction between the use of person categories and other categories. Basically, because information is categorized in terms of a person, and not the pre-existing stored category information, a different categorization-free process is argued to be used to form impressions. The evidence provided to support this aspect of the model will be outlined.

3.3.2 Evidence for personalization in the dual process model

Brewer (1988) conceptualised personalization as a different type of cognitive structure in which "the individual becomes the basis for organization of all relevant information" (p. 22). Brewer drew upon a broad range of social cognitive literature, including research regarding the integration of inconsistent information and information processing mechanisms, to support the existence of a distinct personalization process. There are four main grounds on which categorization and personalization are differentiated: 1) inconsistent information is integrated into personalized impressions but is ignored or used to form sub-types when category-based impressions are formed; 2) there are differences in the order of information recall when personalization compared to categorization is the basis of impression formation; 3) the
type of information recalled varies depending on whether impressions are category- or person-based; and 4) personalization occurs when the target person is similar to the perceiver. Each of these will be addressed in turn (see McCauley, 1988, for a more critical discussion).

The first area Brewer (1988) elaborates on in her discussion of personalization is how new information, in particular inconsistent information, is assimilated with existing knowledge structures. When forming category-based impressions it is argued that inconsistent information is ignored or used to form sub-categories, but with person-based impressions inconsistent information is "processed extensively and incorporated into the person representation" (p. 23). In his analysis of the dual process model McCauley (1988) commented that this contention is challenged by the results of studies like that by Haire and Grunes (1950) reported in Asch (1952, p. 220). Haire and Grunes had two lists, Form A and Form B, which subjects were told contained a brief description of a "working man". The lists were identical except the word "intelligent" was added to Form A. The information included in the forms was not just attributes but statements like "works in a factory", "reads the newspaper" and "cracks jokes".

Haire and Grunes findings suggested that the impressions formed by subjects who received Form A differed from those who received Form B in two main ways. First, subjects tended to modify the term intelligent to fit the trend of the description, as in "he is intelligent, but not too much so, because he works in a factory" or "he is intelligent, but doesn't possess initiative to rise above his group" (Asch,
1952, p. 220). The second finding was that some subjects altered the
group to which the person described belonged, such as from working
man to foreman. The results of the Haire and Grunes study indicate
that where subjects are given a category "working man" the
inconsistent information is not ignored or necessarily used to form a
sub-category but is processed extensively and incorporated into the
impression.

Some interesting comparisons can be made with a study by Asch
and Zukier (1984) where the direct focus was on discordant attributes,
characteristics which are not congruent with others and may impede
the formation of a unified impression. The characteristics read to
subjects were usually discordant word pairs (e.g., sociable-lonely).
Congruent word pairs were also included for comparative purposes. In
addition, to writing a characterisation, subjects also had to document
how the two attributes could be related. Interestingly, one of the
words in the pair became dominant and the other subordinate, so that
the dominant word in the pair constrained the interpretation of the
other word. For example with the word pair "sociable-lonely", "lonely"
influenced the interpretation of "sociable", with "sociable" being
interpreted as a temporary characteristic (e.g., "He puts up a facade";
Asch & Zukier, 1984, p. 1238). The meaning that different words have
is shaped by contextual features such as the other information
available. These two studies are informative about the role of
inconsistent information in impression formation. In one study a
category label was provided (e.g., working man) and in the other only
attribute information was available, and inconsistent information was
differentiated or modified in both cases. In these studies inconsistent
information was dealt with in similar ways regardless of whether the processing was category-based or person-based.

These findings raise questions about whether the way new or inconsistent information is processed can differentiate between categorization and categorization-free processes. Discounting inconsistent information or sub-typing are not the only options. Information, as shown by Haire and Grunes, can be re-interpreted. Fiske & Neuberg (1990) provided a more recent example of how inconsistent information can be reconciled, commenting that:

 perceivers often confirm the category by interpreting attributes that had pretested as category-inconsistent to be consistent instead. Thus, the attribute "strong" was generally perceived by subjects to refer to physical strength when the category label was "construction worker" although strong was interpreted as meaning "strong-minded" when the label provided was "professor" (p. 26)

It is also possible, given that numerous group memberships can characterise a particular person, that inconsistent information can be used to form a different category-based impression (e.g., foreman; see also Jones, 1988). The fact is that inconsistent information can be "processed extensively and incorporated into the person representation" (Brewer, 1988, p. 23) and category-based impressions are still formed. At the very least, then, the role of inconsistent information in impression formation is complex and not as straightforward as Brewer would suggest (see also Rojahn & Pettigrew, 1992; Srull & Wyer, 1989; Stangor & McMillan, 1992; Vonk, 1994). More general questions such as, what inconsistent information
The second point raised by Brewer (1988) in support of the position that person-based and category-based perception involve different information processing mechanisms concerns the order of information recall. According to the dual process model category-based information is initially categorised at the less inclusive stages of individuation and sub-typing. The opposite is argued to be true of person-based processing where information can be processed from the more inclusive to less inclusive. Brewer stated that "recall of information about an individual in a category-based structure should begin with specific individuating features and progress to subtype identification, with superordinate categorization occurring last ... Free recall of personalized individuals, however, should begin with superordinate traits and progress to more specific attributes or behaviors with additional retrieval effort" (p. 24; see also Srull & Wyer, 1989; Wyer & Srull, 1989).

Brewer (1988) referred to Hampson’s (1983) research to support this order of recall hypothesis. Hampson conducted a study in which she asked subjects to describe one person who they either knew well or hardly knew at all. The overall findings indicated that traits were more often used to describe people who were well known to the perceiver compared with those who were known less well. This preference for trait terms is seen by Brewer (1988) to support the position that for person-based perceptions trait information would be recalled first. McCauley (1988) pointed out that this evidence could also support a category-based model of impression formation, because
traits could represent more specific category features. This position is consistent with Hampson’s argument that trait terms can represent cognitive categories. Brewer’s order of recall argument does not explain or clarify whether traits are being used as a category label, a feature of a category label or a more specific attribute (see Anderson & Cole, 1990; Anderson & Klatzky, 1987; Park 1986). How do we know whether intelligence, for example, is being used as a category label or attribute? What is the difference between a category label and an attribute? The order of recall hypothesis is limited by unclear answers to these types of questions (see also Hampson, 1988).

The third aspect of bottom-up processing which was used by Brewer (1988) to support the view that there are two impression formation processes was associated with the type of information recalled. Brewer stated that with personalization both the trait and behaviour information influence memory-based judgements. However, with category-based processing only the category-consistent information can be recalled and not the specific information used to categorize the individual in the first instance. Consequently, subsequent judgements of the individual will be based entirely on the category information.

Brewer (1988) draws on the work of Lingle (1983) to support the argument that different types of information are recalled depending on the type of processing. Lingle investigated whether subjects used remembered events (person-based information) or remembered inferences (category-based information) to make social judgements. The results were that “events are activated in addition to (not instead
of) earlier inferred categorizations" (p. 494). This means that person-based information and category-based information are both used in the recall of events.

A second finding by Lingle (1983) supports Brewer’s (1988) predictions about category-based processing. Lingle found that behaviours consistent with the trait category were better remembered; "descriptors relevant to the inferred categorization are more likely to be activated than category-irrelevant descriptors" (p. 494). However, there were mixed results regarding whether category consistent information is recalled better than category inconsistent information (e.g., Stangor & McMillan, 1992) which complicates Brewer's analysis that with category-based impressions category-consistent information is recalled.

The fourth point made by Brewer (1988) to support the position of two modes of processing revolves around similarity. Brewer argued that person-based representations are more likely to be formed of individuals who are similar to the perceiver; "we are more likely to form person-based representations of individuals who are similar to ourselves than who are distinctly different" (Brewer, 1988, p. 25). The research drawn upon to support this position relates to the outgroup homogeneity effect where outgroup members are perceived as less heterogeneous and more similar to one another than ingroup members. The basic phenomenon was characterised by Hamilton and Trolier (1986) as "they’re all alike but we’re all different" (p. 127). Judgements of ingroup members are argued to be less extreme and more variable (e.g., Jones, Wood & Quattrone, 1981; Linville & Jones, 1980). Also,
more individuating features have been found to be remembered about ingroup members (Park & Rothbart, 1982).

The confusing aspect of Brewer's (1988) analysis is the argument that when we are similar to others we form more differentiated impressions. If similarity means familiarity then clearly it needs to be recognised that it is possible to stereotype people that we know well. For example, it is possible to perceive a colleague as a "radical feminist" or husband as a "sexist male". So stereotypic impressions can be formed of others who are seen as similar to the perceiver. Further, judgements of similarity have been shown to be dependent on the perceivers frame of reference in a given context (e.g., Eiser & Stroebe, 1972; Haslam & Turner, 1992; Hensley & Duval, 1976; Wilder & Thompson, 1988). Whether others are considered to be similar or distinctly different is relative and depends on contextual factors.

Haslam, Oakes, Turner and McGarty (1995a, 1995b) observed that impressions of ingroup members are not always more heterogeneous and that the traditional outgroup homogeneity effect may be a product of the judgement task (see Simon, 1992; Wilder, 1986, for reviews). It was argued by Haslam et al. (1995a, 1995b) that when judgements of outgroups are made there is an implicit intergroup comparison which leads to similarities within both the ingroup and outgroup being accentuated. However, when judgments of the ingroup are made there is often no contrasting outgroup, which leads to within-group interpersonal comparisons where differences between members of the same group are accentuated. For this reason impressions of the ingroup are more heterogeneous than those of the outgroup. This leads
to the prediction that if judgements of the ingroup and outgroup are both made in intergroup contexts, both ingroups and outgroups will be seen as homogeneous and the respective members as more similar to one another. These predictions have been supported in several studies (Haslam et al., 1995a, 1995b).

This alternative interpretation of the outgroup homogeneity effect developed by Haslam et al. (1995a, 1995b) is based on self-categorization theory (e.g., Turner et al., 1987) which is discussed in detail in Chapter 5. The general issue of similarity and interpersonal differentiation is an important element of self-categorization theory. For now, however, we would simply note that the fact that a target is similar to the perceiver may not guarantee more differentiated, complex impression formation processes as defined by Brewer (1988; see Brewer, 1993 for a more recent discussion of ingroup homogeneity and the optimal distinctiveness model; also Kashima & Kashima, 1993).

McCauley (1988) also pointed out in relation to similarity that "more complex and differentiated impressions are not necessarily associated with bottom-up processing" (p. 117). Brewer (1988) does not explicitly link complex and differentiated impressions and bottom-up processing. It may also be possible to have more complex impressions through the individuation stage of category-based processing. The implications of these arguments are that evidence of outgroup homogeneity does not necessarily support one form of processing over another.
In summary, there are four major points made by Brewer (1988) to support the existence of person-based or bottom-up processing as separate from category-based or top-down processing. Support for person-based processing is fundamental to the dual process model which is based on the assumption that there are two processing mechanisms. The preceding review of some of the work cited by Brewer throws considerable doubt on the view that personalization can be clearly differentiated. The hypothesis that there are two modes of processing social information was not unambiguously supported by the literature.

The dual-process model is not alone in arguing for a categorization-free impression formation process. Fiske and Neuberg (1990) in their continuum model also argued that distinct processes are used when we form individuated and stereotypic impressions of others which are respectively based on categorization-free and categorization processes. In the next section the continuum model will be outlined along with the evidence drawn on to support the categorization-free process developed in this model.

3.3.3 The continuum model

The continuum model of impression formation developed by Fiske and Neuberg (1990) argued that impressions of others are formed using a number of different processes which lie on a continuum. At one end of the continuum impressions are formed using information about the groups or categories to which another belongs. At the other end of the continuum impressions are formed from person-specific attribute information.
The notion of a continuum suggests that the two types of information are separable but not mutually exclusive as in the dual process model. As a shift occurs from the category-based towards the individuating end of the continuum, impressions will be based less on category information and more on individuating information and vice versa. That is, pure category and pure individuating information cannot jointly be used in the person perception process (although there has been some recent suggestion that category-based and piecemeal processes are considered to be parallel processes that can occur simultaneously; Fiske, Goodwin, Operario & Stevens, 1996).

The model involves a number of initial assumptions. The main ones are that: 1) category-based processes have priority over attribute-based processes; 2) movement along the continuum between attribute-based and category-based perception depends on the ease with which the perceived attributes fit a category; 3) for more individuating impression formation attention is necessary; 4) motivation can influence the point on the continuum at which impressions develop; 5) attention can mediate the influence motivation has on the impression formation process (Fiske & Neuberg, 1990). Fiske and Neuberg basically argue that perceivers will initially categorize others and form stereotypic impressions. The structure of the information available (category-consistent or category-inconsistent) and the amount of attention allocated to these different types of information will determine whether the impression remains category-based or becomes more individuated and piecemeal.
The continuum model involves five possible stages. The first stage called "initial categorization", is the immediate categorization that occurs once enough information is obtained to cue a particular category. When a category is cued the behaviours and affect associated with that category are also activated. Typically this involves categorizing the person in terms of fairly immediately available information - sex, skin colour, occupation and so on.

Progression to the second stage is dependent upon whether the target is "minimally interesting or personally relevant enough to warrant further processing" (Fiske & Neuberg, 1990, p. 4). As with the dual process model if there is a degree of personal relevance the perceiver attends to the target and begins an information gathering process. The information is used to judge whether the initial categorization was appropriate and whether progression to stage three, a recategorization, is necessary.

Recategorization aims to find an alternative category or subcategory which best fits the target's characteristics. If the recategorization process is successful the conditions associated with that category are activated. If the target cannot be recategorised people can go beyond their categorizations and form impressions of others on the basis of "piecemeal integration".

Fiske (1988) outlines similarities between the personalization stage of the dual process model and the piecemeal integration stage of the continuum model. Like personalization, piecemeal integration results in impressions which are more individuated and not based on
categorization. The outcome is argued to be more complex, rich impressions that are not oversimplified.

Piecemeal integration is purported to be non-category based, that is "the perceiver considers the target's attributes with minimal influence of any category" (Fiske & Neuberg, 1990, p. 8). For piecemeal integration categorization is not the underlying process of social perception and impression formation. The outcome of piecemeal integration is argued to be impressions free from the distortion and over-generalizations associated with categorization and category-based perception. The process is "uncontaminated by category-based generalizations" (Fiske & Neuberg, 1990, p. 8).

Attribute-based perception is achieved by combining attributes without the influence of category information. When discussing piecemeal integration Fiske and Neuberg (1990) stated that; "responses are indeed impressively well predicted by averaging the isolated evaluations of the attributes, without interactions among the attributes and without inferences that might be category-based" (p. 32). Fiske and Neuberg's (1990) piecemeal integration stage is more aligned with Anderson's averages model than his later weighted averages model where the overall impression could influence the valence of component traits. The evidence used to support such a process will be outlined.

3.3.4 Evidence for piecemeal integration in the continuum model

Two main studies are usually taken as supporting the existence of a piecemeal integration process: Fiske, Neuberg, Beattie and
Milberg (1987) and a study by Pavelchak (1989). The former was referred to in order to support the position that "when perceivers are confronted with the target attributes in the absence of any category label, and these attributes do not easily elicit an implied category label, perceivers necessarily must form impressions of the target in a relatively individuating manner" (Fiske & Neuberg, 1990, p. 31). Piecemeal integration and associated use of attribute information is purported to result only if the categorization process is unsuccessful, that is, when no category label is available or a category label is difficult to elicit. Therefore, these two main studies aim to show that when categorization is difficult a different information processing mechanism is used. Given that these findings are central in supporting the idea of a distinct impression formation process in addition to categorization it is worthwhile reviewing them in detail.

In Fiske et al. (1987) there is a strong emphasis on the structure of the information available to the perceiver and how well particular attributes "fit" particular categories. It was predicted that if the attribute information "fits" or is consistent with the category label then impressions would be based on categorization processes. When a label plus category-consistent attributes were provided the attributes were largely seen to be used to confirm the category. So it was argued that when category information was available along with category consistent attributes impressions would be formed through categorization. To the extent that attributes were presented in the absence of category information, or attributes which contest category information were available, more non-categorical, attribute-by-attribute or individuated impressions were predicted.
The notion of "fit" is understood as a matching process between the information in the stimulus environment and pre-existing categories stored in our heads; "when a label is explicitly provided or immediately generated by the perceiver, the perceiver presumably checks the fit between this initial label and the available attributes, on the basis of a category prototype or exemplar stored in memory" (Fiske et al. 1987, p. 403). It is the success or failure of this matching process which is seen to determine whether impressions will be more stereotypic or individuated. When a category label is available we use the stored information and categorize. If a category label is not available we have to independently sum the information available in the stimulus environment. Categorization is seen as the use of stored information that corresponds with particular category labels (the role and nature of categorization as conceptualised in the continuum model is discussed in more detail in Chapter 4).

In order for Fiske et al. (1987) to develop stimulus materials consistent with these predictions regarding the "fit" of information, subjects completed a pre-test questionnaire in which they had to rate the likeability of 13 occupation labels and 14 sets of five traits. The majority of subjects who completed the pre-test completed a second session where six occupation labels and associated attributes were selected. For example the occupation doctor and consistent attributes like practical, educated, scientific, skilful and observant were used in the second stage of the study.

The occupation labels and trait lists were arranged to form four
different types of stimulus configurations. The category labels and attributes were combined to create four different conditions: 1) the consistent condition, where the attributes were fairly typical of the label (e.g., loan shark category label with loan shark traits); 2) the label-focus condition, where the category label was provided but the attributes were meant to be uninformative (e.g., artist category label with neutral traits like brown-haired, television viewer, adult); 3) the inconsistent condition, where the attributes were based on a different category label (e.g., doctor category label with housemaid traits); 4) the attribute-focus condition, where the label "person" was used to be uninformative but one of the attribute lists was included (e.g., person category label with doctor traits).

The main predictions were that attribute information should be used more when categorization is difficult (in the inconsistent and attribute-focus conditions) than when it is easy (in the consistent and label-focus conditions), and that affective responses would be based on the category label when categorization is easy but on attributes when categorization is more difficult. Subjects were also expected to make separate judgements of the typicality of the attributes for the category label (Fiske et al., 1987).

The main dependent measure in the first study was likeability ratings. The ratings subjects made of the category labels and attributes when they were initially presented, independently and in the abstract, were compared with their overall ratings made when the labels and attributes were presented in various combinations. A high correlation between the likeability of the category label when judged in
isolation and the overall likeability rating of the target made when the category labels and attributes were combined was interpreted as evidence of category-based processing. Similarly, a high correlation between independent ratings of the attributes and the overall rating of the target was taken as evidence of piecemeal processing.

Significant correlations were found between the rated likeability of the attributes and overall likeability ratings in all conditions. So there was evidence based on Fiske et al.'s (1987) measures that attributes were used as a basis for likeability judgements in conditions where use of the category label only was predicted. In the consistent condition this finding was explained by reference to the consistency between the category label and the attributes. In the label-focus condition the unexpected correlation with the attributes was interpreted as being indicative of an intermediate impression formation process. It was suggested that the label-focus condition evoked processes further along the continuum from the category-based end-point towards the attribute-based end-point, than the consistent condition. The correlations between the prior category ratings and the combined likeability ratings were significant in the consistent and label-focus conditions, and contrary to predictions a negative correlation was found in the inconsistent condition.

A second study was designed to address a number of issues raised by the first study, the most substantial being that the results "do not address ... greater use of the attribute information in the inconsistent and attribute-focus conditions" (Fiske et al., 1987, p. 414). The second study was a replication of the first study with a few
variations. Most importantly, while thinking about their impression of the target person, subjects were asked to verbalise their thoughts. This procedure was designed to make the processes involved in reaching an impression more transparent.

It was predicted that to the extent that the stimulus person was typical of the occupation category subjects would spontaneously comment on typicality. It was also expected, that the attributes would be mentioned more in the hypothesised attribute-based conditions - the inconsistent and attribute-focus conditions. As in the first experiment it was predicted that the overall likeability ratings of the stimulus person would be correlated with the pre-test category ratings in the consistent and label-focus conditions and with the attribute ratings in the inconsistent and attribute-focus conditions.

The correlation data in the second experiment yielded only two significant results. In the inconsistent and attribute-focus conditions the pre-test ratings of the attributes correlated with overall likeability ratings. The pattern of results was argued to be similar to those in Experiment 1 but with the significance levels affected by a smaller sample. Two judges assessed the protocols for comments on the typicality of the attributes and labels and the number of times the attributes and labels were mentioned. Subjects in the consistent, label-focus and inconsistent conditions all spontaneously commented on the typicality of the attributes. This was not found to be the case in the attribute-focus condition where the authors questioned the role of "person" as a category label.
The number of times the attributes were mentioned was divided by 5 to provide an average number of utterances so direct comparisons could be made with category label usage. Subjects were reported to have made more category label utterances in the consistent, label-focus and inconsistent conditions. The attributes were found to be mentioned more in the inconsistent and attribute-focus conditions than the consistent and label-focus conditions.

It is interesting to note the relative extent to which attributes and labels were mentioned across conditions. In the consistent condition where category-based processes (evidenced by use of the category label) were predicted, there was very little difference between the mean number of attribute and category label mentions (.66 compared to .94, respectively). In the inconsistent condition where attribute-based processes were predicted (evidenced by use of the attributes), the mean rate at which attributes and category labels were mentioned was .93 and 1.28, respectively. The fact that more category utterances were made in the inconsistent compared to the consistent condition contradicts the central theoretical prediction that attributes would be used more under conditions where categorization is supposed to be more difficult. Also the finding that attributes and labels are used to a similar extent in consistent conditions suggests that subjects may use all available information to shape impressions.

A more detailed analysis of the types of processes subjects used when forming impressions was achieved by a closer examination of the talk-aloud data. Basic conclusions of the qualitative analysis can be summarised as follows: 1) in the consistent and label-focus conditions
there was evidence that subjects used both the category and the attributes; 2) subjects generated new categories and subcategories in the inconsistent condition; 3) in the attribute-focus condition subjects sometimes developed their own category to fit the attributes and "formed their impressions by comparing the stimulus person to themselves" (Fiske et al., 1987, p. 421). These methods are interpreted as indicative of intermediate processes on the continuum between the attribute-based and category-based end-points.

The Fiske et al. (1987) article is used to support the position that if categorization is difficult, impressions will be formed through piecemeal integration. Piecemeal integration is clearly described as the isolated summation of attribute information. However, in this study the essence of piecemeal integration is not investigated empirically. In other words, there is no evidence that attributes are summed in an attribute-by-attribute way. What the evidence suggests is that both attributes and labels are used to varying degrees depending on structural properties of the information available to the perceiver.

The empirical work does make explicit a number of inherent assumptions in the continuum model - some of which will be elaborated and discussed in Chapter 4. Essentially it is argued that: 1) the likeability of an attribute or category label is constant and unaffected by the other information with which it is presented (hence the assumption that "use" of an attribute or label can be ascertained through the correlation in likeability ratings across the two different pre-test and experimental contexts); 2) we have stored category labels
defined by constant features which are used to determine "fit" and to categorize others; 3) categorization is the same as use of a category label or stereotype; and 4) use of attributes will lead to individuated impressions.

Many of these same assumptions are evident in the second study outlined by Fiske and Neuberg (1990) to support piecemeal integration and hence two methods by which social information can be processed. Pavelchak (1989) built on the work of Fiske (1982) and Fiske et al. (1987) and confirmed the conclusions highlighted above by stating that these studies had not provided clear empirical support for the idea that piecemeal and category-based are two distinct processes. Pavelchak stated in reference to Fiske et al.'s (1987) results that "subjects in the various conditions all used both types of information: the manipulation only influenced the relative weight placed on each type" and further that "the main principle behind the two-mode model - that piecemeal and category-based processes are distinct processes - has yet to receive clear empirical support" (p. 356).

In Pavelchak's study, subjects were asked to complete a trait/academic major evaluations questionnaire. Subjects had to rate the likeability of 35 academic majors and 50 separately presented personality traits. These evaluations provided comparisons for the second part of the study. Subjects were then re-contacted and asked to participate in a supposedly unrelated study. In this study subjects were randomly assigned to what was called a piecemeal or category condition. Subjects were told they would be reading descriptions about six targets, each of which was described using four personality traits.
In the category condition subjects were asked to guess the target's academic major from the personality characteristics provided and then indicate how typical the target was of others who also had the same major and how likeable the target was on a 10 point scale. The piecemeal condition differed in that subjects rated the likeability of the six stimulus targets first and then guessed their major and made typicality judgements "so that evaluations would not be influenced by categorization" (Pavelchak, 1989, p. 358).

The difference between the piecemeal and category conditions was whether subjects evaluated the likeability of the target person before or after assignment of a category label (by explicitly inferring their academic majors). It was predicted that in the category condition the academic major would influence the way subjects rated the likeability of the target. In the piecemeal condition subjects were expected to make their judgements of the target on the basis of their trait characteristics.

These predictions were assessed by comparing subjects' likeability judgements of the targets with the ratings from the trait/academic majors questionnaire. Subjects in the category condition should like the targets to the same extent as they liked the relevant majors and subjects in the piecemeal condition should like the targets to the same extent as the average of the four personality traits used to describe them. An assumption of this kind of method is that the attribute, "boring", for example, will be equally likeable when presented in isolation as when presented with the attributes,
"studious", "cultured", and "level-headed", or with the academic major "history".

Consistent with predictions, it was found that for subjects in the category condition, the category model was a better predictor of liking than the piecemeal model and the reverse was true for the piecemeal condition. The fact that these results did not eliminate the possibility of both category and attribute information being used led Pavelchak to conduct some further regression analyses. The results were not clear cut with evidence that both attributes and labels were used with three of the six targets.

Pavelchak's (1989) research seems more directed at whether a category label is or is not used in impression formation. It becomes clear that categorization is equated with the use of stored, memorized information related to a particular category. A crucial point is that there is no evidence in the study conducted by Fiske et al. (1987) or the study by Pavelchak (1989) for the fundamental feature of piecemeal integration - the idea that attributes are summed in isolation. None of the evidence which is used to support the notion of piecemeal integration deals with whether attribute information is summed in isolation to form individuated impressions. To resolve this issue and clarify further whether there is a categorization-free process it is necessary to revisit research related to Asch's and Anderson's theories of impression formation.
3.4 The elemental process revisited

Both Fiske and Neuberg (1990) and Brewer (1988) argued that there is a distinct categorization-free impression formation process where impressions are formed based on the summation of attributes in isolation. However, the evidence cited in both models to support the existence of an elemental process does not focus on whether attributes can be summed in isolation. Instead research is simply designed to show that either attributes or labels are used in impression formation. The problem is that evidence that attributes are being used to form impressions does not mean that a distinct piecemeal integration process is the basis of impression formation. The argument that use of attributes or use of a category label reveals that perceivers utilise different impression formation processes is ambiguous and based on a very narrow definition of the categorization process.

Although research cited by Fiske and Neuberg (1990) and Brewer (1988) to support the notion of piecemeal integration and personalization, does not indicate whether attributes can be summed in isolation or not, a study by Hamilton and Zanna (1974) can be used to deduce whether such a process is possible. The results of their study indicated that both the connotative meaning and the likeability of attributes was affected by other specific information with which they were presented. Hamilton and Zanna (1974) looked specifically at changes in the meaning of attributes by presenting test attributes which varied in desirability (e.g., proud, excitable, undecided) with another word which was highly likeable (e.g., happy, friendly), moderately likeable (e.g., righteous, objective), moderately undesirable (e.g., dissatisfied, critical) or highly undesirable (e.g., boring, rude).
The results basically showed that an attribute was rated as less likeable if the information it was presented with was less likeable.

Importantly, subjects also rated the meaning of attributes on scales labelled by synonyms which differed in desirability. For example, the attribute proud was rated on a scale framed by the words "confident" and "conceited". The connotative meaning of the attribute was seen to change in a similar way to the likeability ratings. The less desirable the other information provided with the attribute the less desirable the connotative meaning. So, for example, it was found that the word daring could imply "courage in one context and reckless in another" (Hamilton & Zanna, 1974, p. 654). Clearly both the connotative meaning and likeability of the attribute varied depending on other information provided (see also Asch & Zukier, 1984).

It is surprising in light of evidence like that provided by Hamilton and Zanna (1974), that researchers such as Fiske and Neuberg (1990) would explicitly argue that attributes can be summed in isolation. The existence of an elemental impression formation process is undermined by evidence that contextual factors can affect the connotative meaning and likeability of attributes. If the likeability of attributes varies depending on the other information available then clearly impressions are not based on the "isolated evaluations of attributes" (Fiske & Neuberg, 1990, p. 32).

The two main implications of research like that reported by Hamilton and Zanna (1974) can be summarised as follows: 1) if the likeability of an attribute changes depending on the other information
with which it is presented then clearly attributes are not being summed in isolation to form impressions; and 2) if the likeability of an attribute does change depending on contextual factors then the use of correlations with abstract likeability ratings to assess whether attributes or category labels are used most in impression formation may not be appropriate.

In relation to the first point it is clear that both Asch and Anderson explicitly argued that information could not be summed in isolation. As outlined previously Asch argued that the meaning of particular attributes was shaped in a dynamic context-dependent way. However, Anderson (1974) also argued that the overall impression could influence how a trait was evaluated. For example, Wyer (1974) stated in relation to Anderson's model that "once a set of adjectives is considered as a collective, the judged favourableness of one of these adjectives (the test adjective) increases with the favourableness of those accompanying it (its context)" (p. 829). With the development of the weighted averages model Anderson argued that "averaging is itself a form of stimulus interaction ... this reflects the Gestalt character of the averaging rule, in which the role of each part depends on the whole" (1974, p. 296). Anderson, then, explicitly argued that attributes cannot be summed in isolation. The fact that he agrees that the overall impression can impact on the evaluation of component information raises doubts about a pure elemental process where attributes are summed or averaged in isolation.

The fact that Anderson (1974) argued against the notion that attributes could be evaluated in isolation is significant because Fiske
and Neuberg (1990) and Brewer (1988) extensively cited Anderson in relation to the elemental aspect of their models. For example, in Fiske et al. (1987) it is stated that "the attribute-oriented approach is well developed in Anderson's averaging model of impressions" (p. 401). However, Anderson explicitly argued that Brewer and Fiske were wrong. He stated that "Brewer and Fiske both assert the integration models are piecemeal, data driven, and disallow top-down or semantic processing. This is fundamentally incorrect." (Anderson, 1988, p. 45).

The argument that the likeability of a particular attribute can change depending on the other information with which it is presented has further implications. Most of the research which has examined the relationship between the structure of the information available and impression formation has mainly relied on likeability ratings (an exception is Fiske et al., 1987, Experiment 2). Evidence that the likeability of attributes changes with context undermines the validity of attempts to correlate likeability ratings made when the information is presented in the abstract and then in various combinations.

In summary, both Asch and Anderson argued that the evaluation of an attribute can and does change depending on the overall impression. It is possible that the overall impression acts in the same way as a category. Fiske and Neuberg (1990) defined a category as the "feature that the perceiver uses to organise and understand the remaining features" (p. 9). Based on this definition it is possible that attributes are not summed in isolation but are categorized in terms of the overall impression. Attributes are, therefore, given meaning in relation to the other available information.
3.5 Conclusions

The central feature of this chapter has been discussion of the impression formation process. Several theoretical models regarding how we form impressions of others, both historical and current, have been outlined. The main issue to emerge from the critique of the empirical literature is that there is no direct evidence cited in either the continuum or dual process model that shows attributes are summed in an isolated, elemental way to form individuated impressions. Most of the research seems to focus on use of attributes and use of category labels, where the former is related to individuation and the latter to categorization and stereotyping. However, depending on the way categorization is understood, use of attributes does not necessarily mean that the impression formed is not based on a categorization process.

In current impression formation models it is basically assumed that if a category label is not used in impression formation then the process used is categorization-free. However, results from research such as Hamilton and Zanna (1974) and the argument developed by Anderson (1988) indicated that the overall impression can affect the likeability of component information and act as a category label. If the overall impression is used to shape the likeability and meaning of attributes then clearly impressions are not based on the isolated summation of component information. Clearly, if someone is perceived as "friendly" or "courteous" or "superficial", "these are essentially comparative judgements which could hardly be made in a vacuum of absolute assertions" (Tajfel, 1972, p. 9 of the English manuscript; see
also Zebrowitz-McArthur, 1988; McArthur & Baron, 1983; Baron, 1995). The use of attributes themselves relies on comparison.

There are clear inconsistencies regarding the elemental process in impression formation. There is no direct evidence for the idea that attributes are combined in isolation in an attribute-by-attribute elemental way. The fact that an elemental process has been consistently featured in current impression formation models therefore seems more of a theoretical issue than a product of clear empirical evidence. As will be seen in the next chapter it is the way categorization and stereotyping are understood theoretically in these impression formation models which creates the impetus for a categorization-free process which can lead to accurate, valid and "real" individuated impressions.
4.1 Introduction

In the previous chapter the focus on process was examined and two current impression formation models, Brewer's (1988) dual process model and Fiske and Neuberg's (1990) continuum model, were described. One of the most significant features of these models is that both person perception and stereotyping are addressed concurrently. These models attempt to explain how we form individuated and stereotypic impressions of others.

Chapter 3 concentrated on the controversial attribute-by-attribute, categorization-free process which is argued to be used when individuated, person-based impressions are formed. There was no evidence in either model which directly supported the proposition that individuated impressions are formed in a categorization-free, elemental, piecemeal fashion.

In this chapter the emphasis is on categorization, the alternative impression formation process, outlined in Fiske and Neuberg's (1990) and Brewer's (1988) models, used when stereotypic impressions are formed. The way categorization and stereotyping are conceptualised in
these models is shared by the broader social cognition literature in which they are located (see Leyens, Yzerbyt & Schadron, 1994, for a review). In fact, the way in which stereotyping and categorization are understood in social cognition research can be traced back to claims made by Walter Lippmann in his book *Public Opinion* (1922; also see Chapter 2) that stereotypes were exaggerated representations and "a very partial and inadequate way of representing the world" (p. 72). Categorization has historically been interpreted as a process which simplifies information, but which also introduces error because category-based generalizations are often preferred over more elaborated individuated perception.

More recently, the human perceiver has been characterised as a "cognitive miser" (after Fiske & Taylor, 1984) or "mental sluggard" (Macrae, Hewstone & Griffiths, 1993, p. 78). The perceiver is understood to have limited cognitive capacity and to be fundamentally motivated to preserve precious cognitive resources. Stereotyping is described as the central mechanism through which resources are preserved, so that "when the information-processing gets tough, stereotypes (as heuristics structures) get going" (Macrae et al., 1993, p. 79). Categorization saves time and effort but leads to overgeneralized representations of others.

If impressions based on categorization are thought to be overgeneralized this distortion must be defined with reference to a non-distorted base line - there must be a mode of impression formation which is not distorted. In social cognition research individuated impressions fulfil this function. They are defined as more accurate,
real and valid and, importantly, based on a process other than categorization.

In the second section of this chapter the focus shifts from how we form individuated and stereotypic impressions of others to when these different types of impressions are anticipated. How is variation in the type of impressions formed of others explained? Essentially, because the formation of stereotypic impressions is seen as efficient and designed to preserve cognitive resources, whether or not we stereotype is seen as inversely related to the amount of attention and cognitive resources allocated to the impression formation process.

Two factors have been identified to explain when stereotypic or individuated impressions will be formed: 1) whether a motivation to be accurate exists or not and 2) the availability of cognitive resources. Research related to both of these factors is reviewed in detail because through examination of the way variables are operationalized and the conclusions drawn from particular results the theoretical assumptions inherent in the research become more transparent.

4.2 Social cognition and categorization

Brewer's (1988) dual process model and, in particular, Fiske and Neuberg's (1990) continuum model predict that when available information about a person matches information stored in memory, stereotypic impressions will predominate. Categorization involves the application of stored prejudged responses through the use of category labels and related information. If a match between what is stored and what is perceived cannot be found then more individuated impressions...
based on the integration of attribute information are predicted (see Chapter 3). As will be seen in this section it is also argued throughout these models, and the social cognition literature generally, that categorization is a process used to preserve limited cognitive resources but which also leads to overgeneralization.

The way in which stereotyping and individuation are understood in social cognition research is interwoven with how stereotyping and categorization have been conceived historically. The way categorization is conceptualised has been shaped by a research tradition which has tried to explain largely negative stereotypes and the process responsible for such impressions. Stereotypes have been largely characterised as negative but necessary, as overgeneralizations inversely related to perceivers' cognitive effort. Lippmann (1922, p. 59) commented that:

There is no shortcut through, and no substitute for, an individualized understanding ... but modern life is hurried and multifarious. There is neither time nor opportunity for intimate acquaintance. Instead, we notice a trait which marks a well known type, and fill in the rest of the picture by means of the stereotypes we carry in our heads.

Allport made a similar point (1954, p. 20-21):

We like to solve problems easily. We can do so best if we can fit them rapidly into a satisfactory category and use this category as a means of prejudging the solution ... So long as we can get away with coarse overgeneralizations we tend to do so. Why? Well, it takes less effort, and effort, except in the area of our most intense interests, is disagreeable.
Two important themes regarding stereotyping and the categorization process emerge from the above quotes: 1) the use of category labels saves time and effort; 2) the use of categories leads to overgeneralization. Not much has changed in over half a century of research. In current social cognition literature the categorization process and stereotyping are understood in very similar terms. Each of these themes will be briefly elaborated in terms of current impression formation models and associated theory and research.

4.2.1 Use of category labels saves time and effort

Currently, a widely held view is that perceivers have limited cognitive capacity and categorization is primarily an information reduction mechanism. Perception is seen as bounded by limited cognitive capacity, so we "categorize people into groups as a means of reducing the amount of information we must contend with" (Hamilton & Trolier, 1986, p. 128). Categorization and stereotyping are, therefore, understood as energy saving devices which "spare perceivers the ordeal of responding to an almost incomprehensively complex social world" (Macrae, Milne & Bodenhausen, 1994, p. 37). As Fiske and Neuberg (1990) succinctly put it we "have neither the cognitive capacity nor time to deal with all the interpersonal information ... For reasons of cognitive economy, we categorize others as members of particular groups" (p. 14).

Conversely, forming individuated impressions is argued to consume cognitive resources and to be a "time consuming and effortful affair" (Macrae et al., 1994, p. 37). It is argued to be "both simpler
(requires less effort) and more efficient (requires less time) for the perceiver to use stereotypic information to make inferences about individuals ... than it is to analyze each person on an individual basis (Fiske & Neuberg, 1990, p. 14). Individuation can be summarised as, effortful, resource consuming and inefficient.

Given that use of category labels saves time and effort it is increased attention and the availability of cognitive resources which drives whether more individuated or stereotypic impressions will be formed. This position is clear in the continuum model and related research where attention is a core theoretical and empirical feature. Attention enables movement along Fiske and Neuberg's (1990) continuum: "the model proposes that attention is a necessary mediator through which the different types of impression formation take place" (Fiske & Neuberg, 1990, p. 2). Stereotypic or category-based impressions are argued to occur when "perceivers have only limited attentional resources" (Fiske & Neuberg, 1990, p. 33) and the allocation of attention precedes individuated impression formation. Riley and Fiske (1991) stated that "increased attention is a prerequisite for individuating impression formation" (p. 176). In a more recent discussion of the role of power in stereotyping Fiske (1993b) focuses on the role attention plays in stereotyping, arguing that "powerful people can be discouraged from stereotyping by getting them to pay attention" (p. 621, see also Fiske et al., 1996).

There is a relatively new and growing body of empirical literature testing the prediction that stereotypic impressions are formed when there is a greater load on the cognitive system or less
opportunity to allocate attention to the impression formation process. Aspects of this work are discussed in detail in section 4.3 of this chapter. But first it is necessary to examine the position that stereotypes are biased and inaccurate relative to individuated perception.

4.2.2 Use of categories leads to overgeneralization

Also reflected in the quote by Allport above, is the belief that at the same time that categorization conserves resources it creates distortion and overgeneralization. Macrae et al. (1994) argued that stereotypes are used because they afford the perceiver "the luxury of constructing an abbreviated, though sometimes erroneous, conception of social reality" (p. 37). Stereotypes, therefore, allow "potentially erroneous, target-based impressions at very little cognitive cost" (Macrae et al., 1994, p. 45, emphasis added). Hamilton, Stroessner and Driscoll (1994) in a chapter titled "Social cognition and the study of stereotyping" also argued that group perceptions were overgeneralized and erroneous but that such impressions could be formed without intent or awareness (see also Stephan, 1985).

The relationship between categorization and distortion is also clearly reflected in the continuum and dual process models. In an article by Neuberg and Fiske (1987) it was stated that "one can reasonably conceptualise category-based impression formation as a type of potentially biased cognitive strategy used by perceivers to limit cognitive load and increase cognitive efficiency while forming impressions of others"(p. 433, emphasis added). Fiske and Neuberg (1990) also stated that "categorization by definition generalises beyond
the individual case and thus introduces error" (p. 62, emphasis added). Similarly, Brewer (1988) argued that categorization "is problematic to the extent that relevant information about an individual is either lost or misinterpreted in the categorization process" (p. 28, emphasis added).

The whole notion of overgeneralization implies that stereotypic impressions must be distorted relative to a less overgeneralised level of perception - individuation. Fiske and Neuberg (1990) explicitly and unequivocally endorse the view that categorization distorts perception away from a preferable and more accurate individual level. They acknowledged in the conclusions of their 1990 article that "in effect, we have implied throughout this effort that individuation is preferable to categorization" (p. 62). Further, "we have emphasised individuation also because using a single category is inherently likely to be less accurate than using the individual's whole range of noticeable attributes" (p. 62).

In the penultimate paragraph of a 62 page article Fiske and Neuberg (1990) did attempt to highlight circumstances where "an approximately accurate category-based answer may be better than a more accurate but less efficient individuated answer" (p. 62). Interestingly, even in this discussion of potentially, "approximately accurate" category-based impressions the "individuated answer" remains "more accurate". In this one paragraph the emphasis is on a cost benefit analysis where category-based impressions may be understandable in some situations. However, the overriding message is that individuation is more accurate than stereotyping.
Fiske and Neuberg (1990) explicitly argued that their "analysis has focused primarily on cases of unjustified and potentially injurious category-based responses" (p. 62). A major issue with the continuum model is reflected in this statement. The continuum model was developed to account for the use of "unjustified and potentially injurious" stereotypes and to understand how these stereotypes could be overcome through increased attention and individuation. These comments capture how stereotyping is understood in the social cognition literature generally. Stereotyping is seen as undesirable, based on overgeneralization and distortion, whereas individuation is seen as accurate and more desirable.

The position that use of categories leads to overgeneralization provides insights into understanding why distinct impression formation processes are advocated in contemporary models. The reasons for two impression formation processes, are interconnected with stereotypes being seen as distorted, mistaken representations of others and a desire to formulate an explanation for such erroneous impressions. Stereotypes are seen to be based on categorization, a process argued to limit information, which inadvertently distorts information and is generally characterised as "a necessary, if unfortunate, byproduct of our cognitive makeup" (Fiske & Neuberg, 1990, p. 14). Based on this conceptualisation of the categorization process, there clearly needs to be a separate categorization-free process which affords more accurate, non-distorted, reality based impressions of others.
A particularly pertinent issue for those who argue that there are two impression formation processes is the question of what determines when one or the other impression formation process will operate. In the next section factors which mediate the formation of individuated or stereotypic impressions are outlined. Based on the way categorization is understood in contemporary impression formation models and social cognition generally, it comes as no surprise that increased individuation is widely seen to be positively correlated with 1) accuracy motivations and 2) the allocation of cognitive resources. Research which concerns both motivational and attentional factors is discussed.

4.3 When do we stereotype and individuate others?

A number of factors have been identified which are seen to influence whether perceivers will form stereotypic or more individuated impressions. Included are outcome dependence (e.g., Erber & Fiske, 1984; Neuberg & Fiske, 1987; Ruscher & Fiske, 1990; Ruscher, Fiske, Miki & Van Manen, 1991); anticipated interaction (e.g., Devine, Sedikides & Fuhrman, 1989; Srull, Lichtenstein & Rothbart, 1985); cognitive load (e.g., Macrae et al., 1993); perceived accountability (e.g., Tetlock, 1983; Tetlock & Kim, 1987); accuracy goals (Neuberg, 1989; Neuberg & Fiske, 1987 Experiment 3); availability of particular individuating information (e.g., Krueger & Rothbart, 1988; Kunda & Sherman-Williams, 1993); group identity and expectancies (e.g., Brewer, Weber & Carini, 1995); the perceived judgeability of the target (e.g., Yzerbyt, Schadron, Leyens and Rocher, 1994) and self-presentation to third parties (e.g., Freund, Kruglanski & Schpitzajzen, 1985; Kruglanski & Freund, 1983). Many of these factors are interpreted as affecting the perceiver's motivation to form
accurate impressions. In studies investigating motivational factors, such as interdependence or accuracy goals, and in studies of cognitive load, an explicit theoretical and empirical link is drawn between the formation of more accurate individuated impressions and increased attention.

4.3.1 Motivational factors

Importantly, Fiske and Neuberg (1990) specify a very specific role for motivation in their continuum model (see also Kunda, 1990). Generally, it is predicted that when a motivation exists to predict or truly understand another's behaviour, attention or cognitive resources will be allocated so an individuated impression can be formed (Erber & Fiske, 1984; Fiske & Ruscher, 1993; Riley & Fiske, 1991; note that perceivers are not thought to be able to truly understand another's behaviour in terms of their group membership and the relationship between groups). Motivational factors influence which information is attended to and whether perceivers will allocate resources to the impression formation process or not (Fiske, 1993a; see also Pendry & Macrae, 1996).

Given the dominant and significant role of motivation in the continuum model much of the associated research endeavours to manipulate perceivers' motivations. But the important point is that motivation is manipulated to increase attention and therefore to reduce stereotyping. Of particular relevance to this thesis are a series of studies by Neuberg and Fiske (1987) and Ruscher et al. (1991), which use different motivation manipulations to examine when Stereotypic and individuated impressions are formed of others. In
Neuberg and Fiske (1987) cooperative interdependence and accuracy goals are used and in Ruscher et al. (1991) competitive interdependence is manipulated.

However, before these studies are discussed it is important to consider what constitutes evidence of individuation. As discussed in Chapter 3, there is no direct evidence that impressions can be formed in an attribute-by-attribute, elemental fashion. How, then, do we know when impressions are not category-based? Ruscher et al. (1991) recognised the role of attributes and inconsistent information in individuation. The way in which competitively interdependent perceivers form impressions of their opponent was described as follows:

For interdependent perceivers, attending to each other's idiosyncratic attributes aids prediction and control because success depends partly on the partner's behavior ... As interdependent perceivers incorporate these idiosyncratic attributes into their impressions by means of attention, they simultaneously refine and supplement their initial expectancies, making individuation possible ... Expectancy inconsistent information in particular yields greatest gains in supplementing an initial expectancy ... Not surprisingly, it is precisely to inconsistent information that interdependent perceivers attend. (p. 597)

Consistent with the view that initial expectations are based on categorization and are therefore distorted, individuation is only possible when these initial expectations are supplemented and refined. In line with Ruscher et al. (1991) individuation is typically evidenced by increased attention to, and use of, idiosyncratic attributes and expectancy-inconsistent information. We now turn to the studies
themselves.

In a study by Neuberg and Fiske (1987) the way in which interpersonal outcome dependence influenced the impression formation process was investigated. It was predicted that outcome-dependence would facilitate "the use of relatively individuating processes and that the use of these individuating processes may be mediated by increased accuracy-driven attention to attribute information" (p. 434). In discussion of impression formation processes individuation and accurate impression formation are used interchangeably.

Outcome dependence is argued to change the relationship between perceivers and the perceived. Perceivers who are outcome dependent may "attempt to form more accurate impressions in order to predict the other's behavior better and thus have greater control over their own outcomes" (Neuberg & Fiske, 1987, p. 433). Further, it is also stated that "under some circumstances, outcome dependency may motivate one to attempt greater accuracy, which may be reflected in more thought about the other on whom one depends" (p. 433). The authors do clarify that even if a motivation exists to be accurate, accurate impressions may not be formed; "perceivers could still form an inaccurate impression of the target, perhaps by allowing a target's category membership to bias either the search for information or the interpretation of that information" (p. 433). Unambiguously, individuated impressions are seen as accurate and category-based impressions biased and inaccurate.
Neuberg and Fiske (1987) conducted three studies to investigate the overall hypothesis that outcome dependence would lead to accuracy-driven attention to attribute information and, therefore, individuating impression formation processes. In the first study subjects were led to believe they would be designing creative games in interaction with a schizophrenic patient who had been hospitalised. Outcome dependence was manipulated by informing subjects that $20.00 would be given to each member of the subject-patient team who designed the most games. The subject and patient were cooperatively interdependent because the prize was to be awarded on the basis of their combined efforts. Subjects, in the not outcome dependent condition, were told that both a subject and patient could win a prize of $20.00 based on their own contributions rather than the overall performance of the team. Therefore, subject and patient would not be competing as a team, but subjects would compete with other subjects and patients with other patients.

In order to (supposedly) make the interactions go more smoothly the subject and patient were given some information about one another. Subjects were asked to fill out an information sheet describing amongst other details their interests, hobbies and career goals. This information sheet was supposedly given to the patient situated in an adjacent room and the patient's information sheet to the subject. In fact subjects were given one of two bogus information sheets which contained either neutral or inconsistent information associated with the schizophrenic category label.

In the neutral condition subjects were given a sheet containing
information that was affectively neutral, that is, it contained information neither consistent nor inconsistent with the schizophrenic label. In the inconsistent condition subjects received information that was affectively positive and "discrepant with respect to the schizophrenic label" (Neuberg & Fiske, 1987, p. 435). After reading the patient's profile subjects completed a questionnaire which included rating, on a 1 to 15 scale, how likeable they thought Frank (the patient) seemed to be. The other main dependent variable was a measure of attention to attribute information, operationalized as the amount of time each subject spent reading the patient profile.

It was predicted that individuating processes would be used in the outcome dependent conditions because "subjects would be motivated to think about Frank's own particular characteristics in an attempt to better predict Frank's behavior and have greater control over the results of the interaction" (p. 435-6). Therefore, in outcome dependent conditions if subjects were using the information presented in the patient profile to form impressions, rather than the schizophrenic label, impressions should be neutral in the neutral conditions and positive in the inconsistent conditions. When the subject and target are not outcome dependent theoretically the category label should be the basis of the impressions. Given that the schizophrenic label was pre-tested as negative (the mean rating on a 1 to 15 scale was 4.6) if the category label was being used then these impressions should be negative.

Interestingly, despite the important theoretical role outcome dependence is argued to play in impression formation, Neuberg and
Fiske (1987) did not predict that outcome dependence would have any effect on when inconsistent information was used to describe Frank. They argued that inconsistent information "encourages relatively individuating processes anyway" (p. 437) so no differences between outcome dependent and independent conditions were expected. The view that inconsistent information automatically leads to individuation disregards the possibility that inconsistent information can be reinterpreted or ignored (a point discussed in Chapter 3).

The main analysis concerned ratings of likeability. Mean likeability ratings ranged from 10.08 in the neutral/not outcome dependent condition to 12.04 in the inconsistent/not outcome dependent condition. Clearly, even where Frank was seen as least likeable, the mean (10.08) was much higher than the pre-tested mean likeability of the schizophrenic category label (4.6) so it is difficult to argue that the category label is the basis of the impression in this condition. It is also difficult, given that Frank was generally liked in all conditions, to determine where impressions are neutral and where they are positive. In fact in later reference to a heart patient label a mean likeability score of 10.1 is argued to be judged affectively neutral. Neuberg and Fiske (1987) argued that the results "indicate that perceivers apparently used the neutral attribute information to a greater extent when outcome dependent than when not" (p. 436).

Similar conclusions are drawn from findings on the attention measure. It was found that subjects spent more time reading the profile information about Frank in the two inconsistent conditions and the neutral/outcome dependent condition than in the neutral/not
outcome dependent condition. It was concluded that "subjects paid more attention to the attribute information in the three conditions that indicated individuating processing than in the one condition that did not. These results are consistent with the idea that attention to attribute information may play a role in eliciting individuating processes" (p. 437).

Alternatively, one could interpret these results as indicating that it takes more time for subjects to form positive impressions. It is not clear that outcome dependence is necessarily affecting the actual process (i.e., categorization versus attribute-based) used to form impressions. For this reason in a second study the information used to describe Frank was controlled. In all conditions subjects were given information that was consistent with the schizophrenic label and outcome dependence was manipulated in the same way as in Experiment 1. In the label condition subjects were told that Frank was a schizophrenic patient but in the no label condition they were told he "entered St. Mary's around a year ago". There were also two additional conditions (outcome dependent and independent) in which subjects were told that Frank was a heart patient but the results on the main dependent measures were not compared directly.

It was predicted that because the information provided about Frank was consistent with being a schizophrenic, negative impressions would be formed regardless of whether the schizophrenic label was provided or not. In place of time spent reading the profile information, the measure of attention in this study was the amount of time it took subjects to make an unexpected likeability judgement. It was
predicted that subjects would take longer to make their judgements where individuation was predicted; in the two no label conditions and in the schizophrenic label/outcome dependent condition. The mean judgement times were consistent with predictions. Mean judgement latencies (in seconds) in the no label conditions were 12.00 in the not outcome dependent and 12.05 in the outcome dependent conditions. In the schizophrenic label conditions the means were 7.71 in the not outcome dependent and 13.55 in the outcome dependent conditions. So subjects were able to make the likeability judgments fastest when they were not outcome dependent with the target and were informed that the target was a schizophrenic patient.

Based on the theoretical relationship between increased motivation, attention and individuation, subjects should invest more attention, and therefore make slower responses in the outcome dependent conditions. It was predicted that the "outcome-dependency manipulation would influence the amount of attention required to form the impression without influencing the content of the judgements made" (Neuberg & Fiske, 1987, p. 438). The fact that similar response latencies were observed in the no label/outcome dependent (12.05) and no label/not outcome dependent (12.00) conditions indicates that the amount of time taken to make a judgement is not straightforwardly affected by outcome dependency. It is also important to remember that attribute information consistent with being a schizophrenic was used in this second study, so the information would have been easily categorizable. Based on the assumption that attributes can be used to elicit a category label (see Fiske et al. 1987; Fiske & Neuberg, 1990) a case could be made that more stereotypic impressions and faster
likeability judgements should have been made in the no label/not outcome dependent condition.

A third study was designed to investigate whether "increased accuracy-driven attention to attribute information may mediate the influence of outcome dependency on individuating impression formation processes" (Neuberg & Fiske, 1987, p. 440). The study was similar to Experiment 1, except that accuracy-driven attention rather than outcome dependence was manipulated. Subjects in the accuracy-driven attention condition were told that "It is extremely important that you make every effort to form as accurate an impression as possible" (p. 441). This instruction was omitted in the no accuracy driven attention condition.

The mean likeability ratings (on a 1 to 15 scale) for each condition can be ranked from lowest to highest as follows: neutral/no accuracy driven attention (10.13), neutral/accuracy driven attention (11.27), inconsistent/accuracy driven attention (11.64), and inconsistent/no accuracy driven attention (11.67). With the lowest mean being 10.13 the impression is more neutral than negative and given that all impressions, as in Experiment 1, are relatively positive it is not convincing that the impressions in the no accuracy driven attention conditions are more category-based (in the sense of being based on a pre-stored negative impression of schizophrenics).

However, Neuberg and Fiske (1987) claimed the results of these studies as evidence that outcome dependence and accuracy driven attention instructions or goals motivate subjects to increase accuracy-
driven attention and form more individuated impressions. It is concluded that "outcome dependency leads to relatively individuating impression formation processes and that this effect is mediated by increased accuracy-driven attention to the target's attribute information" (p. 441). Further, "it seems reasonable to posit that accuracy-driven attention to attribute information mediates outcome dependency's tendency to elicit relatively individuating impression formation processes" (p. 442). Again, and unambiguously, accurate impressions are equated with individuated impressions, and it is attention to attribute information which is argued to lead to these individuated impressions. Neuberg and Fiske (1987) directly argued that individuated impressions are more accurate: "our results suggest that outcome dependency leads perceivers to evaluate targets with respect to their actual characteristics" (p. 442, emphasis added).

In these three studies by Neuberg and Fiske (1987) the focus is on interpersonal impression formation - subjects forming an impression of another individual. Typically, stereotyping and category-based processes have been operationalized through the provision of category labels (see also Fiske et al., 1987, outlined in Chapter 3). In a study by Ruscher et al. (1991) impression formation was investigated in interpersonal and intergroup situations.

Ruscher et al. (1991; Ruscher & Fiske, 1990) argued that outcome dependence had been typically manipulated through cooperation (e.g., Erber & Fiske, 1984; Neuberg & Fiske, 1987). The subject and target person (the person the subject had to form an impression of) were told that they would be awarded a prize based on
their combined efforts. Consequently, interdependence is confounded with the subject and target being members of the same team. Ruscher and Fiske (1990) were interested in unconfounding interdependence and group membership by focusing on competitive interdependence. They found evidence that when a subject and target were competitively interdependent more time was spent looking at inconsistent information about the target. The conclusion was that, as with cooperative interdependence, competitive interdependence led subjects to want to better predict their opponent's behaviour and form more individuated impressions.

However, in a later article by Ruscher et al. (1991) another related issue was identified. Although individuated impressions are formed when subjects believe they will be competing with another individual person for a prize the same may not hold for intergroup competitors. They cited a number of instances, including research associated with the outgroup homogeneity effect (e.g., Linville & Jones, 1980; Linville, Salovey & Fischer, 1986) which indicated that more stereotypic impressions are formed of opponent group members when groups are effectively competitively interdependent. They argued that although both interpersonal and intergroup competition "involve competitive interdependence, intergroup competitors are simultaneously co-operatively interdependent with their teammates" (p. 596). Ruscher et al. (1991, p. 596) offered a cognitive resources explanation for stereotyping in intergroup contexts:

Intergroup competitors therefore have two possible foci of attention: members of their own team and members of the opposing team. We propose that, given limited attentional
resources, intergroup competitors' higher priority is forming impressions of their team mates. The lack of team mates in the interpersonal competition eliminates this drain on attentional resources and allows perceivers to allocate more individuating attention to opponents.

Ruscher et al. (1991) conducted two experiments. The design of the first experiment involved an intergroup and interpersonal manipulation. In the interpersonal conditions subjects thought that they would be playing a game with one opponent and in the intergroup conditions they thought they would be playing the game with two ingroup members (team mates) and three outgroup members (opponents). In all conditions subjects read about five players. In the intergroup condition the team, either ingroup or outgroup, with the highest score would be entered into a draw with other winning teams for a $45 prize. Subjects were therefore cooperatively interdependent with team mates but competitively interdependent with opponents. In the interpersonal condition subjects were told that they would be randomly paired with another person and that if they were the winner they had a chance to win a $15 prize. In all conditions, then, the subject and targets were outcome dependent.

Subjects were informed that they (and team mates in the intergroup condition) were likely to perform about average on the task. This made it possible to manipulate the anticipated performance of opponents as either competent or incompetent, which in turn enabled subsequent information provided to be expectancy-consistent or expectancy-inconsistent. Using a similar practice to Ruscher and Fiske (1990), subjects were given self-descriptive statements about five
other players, the first of which described anticipated (in)competence at the task. Eight additional statements either consistent, inconsistent or neutral regarding (in)competency followed. In the condition where competency was expected statements associated with incompetence were seen as inconsistent, and vice versa.

It was found that in the interpersonal condition more time was spent looking at inconsistent than consistent information about the opponent. From the talk aloud data generated from each subject responding vocally to information provided about their opponent, it was also found that more dispositional inferences were made in the interpersonal condition.

In this first study differential attention to inconsistent and consistent information about team mates and opponents in intergroup conditions could not be assessed because expectations of team mates were neutral. Ruscher et al. (1991) concluded that their first study supported the view that an interpersonal competition would lead to more individuated impressions of opponents than intergroup competition because "individuation of opponents during intergroup encounters is hampered because perceivers use their attentional resources to individuate teammates" (p. 601). However, they acknowledged that they also needed to demonstrate the hypothesised basis for this finding in attentional resources. A second experiment was designed predicting that: "individuating processes (attention to and dispositional inferences about inconsistent information, as well as more heterogeneous impressions) would be used more in forming impressions of team mates than of opponents" (p. 601).
Again in this study an expectation for targets (1 team mate and 2 opponents) to be competent (superior) or incompetent (inferior) in performance on the task was manipulated along with whether the target was a member of the subject's own or the competing group. Findings indicated that subjects used consistent information more when forming impressions of opponents and inconsistent information when forming impressions of team mates. More dispositional comments were also made about team members in terms of inconsistent information than consistent information and vice versa for opponents. Self-references were also more likely to be made when discussing team mates.

This finding that in intergroup interdependent situations team mates are individuated (evidenced by the focus on inconsistent information) but that opponents are stereotyped (evidenced by the focus on consistent information) is of course at odds with the hypothesis that outcome dependence increases attention and leads to individuation. Yet it is consistent with Ruscher et al.'s (1991) analysis that in intergroup situations opponents are not individuated "because given limited resources intergroup competitors' higher priority is forming impressions of team mates" (p. 596; see Fiske 1993b; Fiske & Ruscher, 1993).

However, the results of Ruscher et al.'s (1991) study reveals that although increased time was spent examining consistent information for opponents and inconsistent information for team mates, the total amount of time spent examining information associated with the
opposing team and the subject's own team does not differ (93.1 seconds for the opposing team and 93.3 seconds for own team; see also Spears & Haslam, 1997). It is not clear that the subjects were investing more attentional resources when forming impressions of ingroup members at the expense of opponents, or that more attention overall was required by subjects to form more individuated impression of team mates. Why did subjects, if they had limited resources, spend more time looking at consistent information about opponents? Ruscher et al. (1991, p. 603) argued that it was because:

given a lack of major motivation to be accurate, a perceiver may simply focus on category-consistent attributes to reconfirm the category ... intergroup competitors were unwilling to expend the major resources to incorporate inconsistent information into their impressions of opponents. However, they complied with the experimenter's requirement to form impressions of their opponents by simply reconfirming their expectancies ... through increased attention to expectancy-consistent information.

It is not clear why attention to consistent information is compliance with experimenter demands whereas, attention to inconsistent information represents effort towards accuracy (Oakes & Reynolds, 1995). The explanation that stereotypic impressions are formed of opponents in intergroup competition because of limited cognitive capacity is undermined by evidence that overall attention to information about team mates and opponents did not vary.

More generally, the evidence that outcome dependence manipulations do in fact increase the attention invested in impression formation is, at the very least, equivocal. Erber and Fiske (1984,
Experiment 1) found that the time spent looking at information about a target was 54.76 seconds in a no outcome dependent condition, and 56.26 seconds in an outcome dependent condition. Ruscher & Fiske (1990) reported no significant difference between attention to information in their no interdependence (86.27 seconds) and interdependence (100.67 seconds) conditions. In their second experiment the pattern reversed, with average time spent looking at information being 67.90 seconds and 66.82 seconds in the no interdependence and interdependence conditions respectively. In the studies reported by Neuberg and Fiske (1987; see Chapter 5) only the first study assessed attention as time spent looking at information, and no main effect for outcome dependence was found (note, however, that none was predicted because the provision of inconsistent information was argued to automatically lead to individuation). The results of these studies therefore reveal no systematic evidence that interdependence manipulations do in fact clearly result in an increase in the overall attention allocated to the impression formation task.

The link between interdependence, a motivation to allocate more attention, and individuation is not as direct as the social cognitive theoretical analysis suggests. However, what is clear in Ruscher et al.'s (1991) study is that the type of information subjects attend to when forming impressions of ingroup compared to outgroup members varies regardless of interdependence. Alternative explanations for such findings are outlined in the context of the empirical work of the thesis in chapters 6 and 7. At this point it is important to note that there seems to be a relationship between forming impressions of ingroup members and gaze duration at inconsistent information. We
4.3.3 Cognitive load and the stereotyping process

The theoretical position that stereotypes require less effort and use fewer resources has also been investigated by trying to demonstrate that stereotypes are used more when perceivers' cognitive load is increased (e.g., Bodenhausen, 1990; Bodenhausen & Wyer, 1985; Gilbert & Hixon, 1991; Macrae, Hewstone, & Griffiths, 1993; Pratto & Bargh, 1991; Rothbart, Fulero, Jensen, Howard & Birrell, 1978; Stangor & Duan, 1991). Cognitive load has been mainly operationalized through task complexity or cognitive busyness (see Spears & Haslam, 1997, for a review).

The use of stereotypes or heuristics has been shown to increase for more complex judgement tasks (Bodenhausen & Lichtenstein, 1987). However, Gilbert and Hixon (1991) found that cognitive busyness only increased stereotyping when the stereotype was activated. In the first study reported by Gilbert and Hixon (1991) subjects were presented with incomplete words presented on cards by either an Asian or Caucasian card-turning assistant. The five key word fragments were piloted to be stereotypic of Asians (e.g., POLI_E (polite), S_Y (shy), RI_E (rice)). Subjects had to complete the word fragments under conditions where they did (busy condition) or did not (not busy condition) have to rehearse an eight-digit number. Rather than cognitive busyness increasing the use of stereotypes it was anticipated that cognitive busyness would inhibit stereotype
activation. It was predicted and found that non-busy subjects generated more stereotypic completions of the word fragments.

These findings were replicated in a second study which also included a distinct application stage. All subjects had to listen to the card-turning assistant describe their day, half of the subjects concurrently had to register recognition of letters presented on a screen. Results indicated that those subjects not busy in the first stage of the experiment and then busy during the activation stage made more stereotypic ratings of the Asian than Caucasian card-turning assistant. Gilbert and Hixon (1991) concluded that "people are more likely to rely on activated stereotypes when conscious deliberation becomes difficult, but the very conditions that interfere with conscious deliberations may also interfere with the activation of the stereotypes" (p. 515). It is important to note that there were few differences in performance for those in the overload, busy condition - "cognitive busyness did not prevent subjects from performing well on the completion task or from noticing the assistant's race" (p. 511). Such findings question whether cognitive resources are constrained by cognitive load manipulations and suggest perhaps that other factors could account for the results obtained.

Macrae et al. (1993) also manipulated "cognitive busyness" by requiring subjects to rehearse an eight digit number while completing experimental tasks. The effects of cognitive load on the recall of inconsistent and consistent information was the research focus (see also Stangor & Duan, 1991). To create a more realistic stimulus subjects watched a video depicting a conversation between two women.
One of the women (the experimental target) was described to subjects as either a hairdresser or doctor and the statements made by her were stereotypic of hairdressers (e.g., a hairdresser in the United Kingdom "goes to Spain for holidays") and stereotypic of doctors (e.g., "interested in politics"). Statements stereotypic of doctors were stereotype-disconfirming of hairdressers and vice versa. Results showed that subjects in the low-load condition recalled more inconsistent than consistent information about the target. The reverse was true for the high load condition. As in the motivational studies described in the last section, use of inconsistent information was argued to reflect a reduction in stereotyping.

Spears and Haslam (1997, also see Haslam, Oakes, Rainbird & Spears, 1994) argued that where subjects have to rehearse an eight digit number or recognise letters presented on a screen and view information about a particular target, they could be confused as to the main task of the study. Haslam et al. (1994) argued that the researchers' manipulation of load is confounded with that of task orientation. In their high load condition it is not simply the case that subjects have more information to deal with that might impact upon their attentional resources but also that they actually have a different task to perform" (p. 6). It is also worth noting that these researchers were unable to replicate the results obtained by Macrae et al. (1993).

The cognitive resources allocated to a particular task have also been assessed through performance on a second task. Macrae et al. (1994) had subjects perform two tasks concurrently and subjects were told they would be assessed on both tasks. Subjects had to form an
impression of a target when stereotypic information was absent or present. For example, subjects were presented with personality traits describing "John" (that he was rebellious, aggressive, dangerous, observant and modest) and were asked to form an impression of him. In one condition, the stereotype condition, subjects were also told that John was a skinhead as each of the five stereotypic and five neutral personality traits were presented.

At the same time subjects had to monitor information presented via a tape-recorder. The prediction was that the impression formation task would be easier - use less resources - when a category label for the target was available. If this was the case then further resources could be applied to, and improve performance on, the monitoring task. The predictions of the first study were generally supported. Effects were also found on subsequent studies where supraliminal and subliminal priming techniques were used.

However, better performance on the second task in Macrae et al.'s (1994) studies could be determined by whether an impression already existed or not. Subjects were relying on existing impressions in the stereotype condition and where no stereotype information was provided a new impression was being formed. It would be interesting to assess subjects' performance on the concurrent task under conditions where subjects in the no stereotype information condition had already formed an impression of what John was like as a person. There is a clear need to move away from first impressions when making predictions about when we individuate and stereotype others. It is also worthwhile examining the types of impressions formed under
conditions where less stereotypic information is provided. For example, Yzerbyt, Rocher and Coull (1996a, 1996b) found that stereotypes only enhanced information processing when there was a moderate degree of stereotypicality. Based on results like these, Yzerbyt, Rocher and Schadron (1997) challenged the view that stereotypes are energy-saving devices and argued that stereotypes have a major sense-making role and are themselves explanations (see also Leyens, Yzerbyt & Schadron, 1992; Yzerbyt & Leyens, 1991).

Nolan, Haslam, Spears & Oakes (1996) also offered an alternative explanation of stereotyping which moves away from cognitive resources based accounts. They endorsed a fit- or meaning-based approach where an important function of stereotyping was seen "to increase access to information about the subjectively real similarities and differences between social groups in a given context" (p. 10, emphasis in the original). This approach is based on self-categorization theory which is discussed in Chapter 5.

Subjects were presented with information about six targets (3 hairdressers and 3 doctors) which was "highly fitting", that is, the targets generally behaved in a stereotype-consistent fashion. Load was manipulated in the first study as a concurrent task and in the second study as time pressure. The main dependent variable was the number of intracategory to intercategory confusions on a recognition task (after Taylor, Fiske, Etcoff & Ruderman, 1978). If stereotypic impressions are formed under high load conditions then stereotyping should increase with load. However, if the formation of stereotypic impressions is related to fit detection then in the high load conditions
less stereotyping would be possible. The results indicated that subjects made more intercategory compared to intracategory confusions (they stereotyped less) as cognitive load increased. The results challenge the view that stereotyping is always efficient and effortless and encourage further, more direct examinations of the fit-based approach.

In summary then, there are clearly issues with the way cognitive capacity has been manipulated in the cognitive load literature. It is not clear whether the results obtained are due to cognitive capacity or alternative explanations such as whether subjects have a different task to perform. An associated issue is whether these studies are actually manipulating cognitive load. Gilbert and Hixon (1991) argued that busy subjects are deprived of processing resources and should "perform more poorly than non-busy subjects on a variety of indices ... substantial error rates on an overload task are necessary if one is to claim unequivocally that capacity is exceeded" (p. 511). If limited cognitive resources are the basis for categorization then it needs to be clear that "capacity is exceeded" where stereotyping is predicted.

As highlighted by Nolan et al. (1996, p. 7) in the cognitive load literature the perceiver is interpreted as a passive processor of information. Similarly, Neisser (1976) commented that "the very concept of 'capacity' seems better suited to a passive vessel into which things are put than to an active developing structure" (p. 80). The view that categorization is used to preserve cognitive resources has generally focused attention away from more fundamental questions
about the purpose of social perception and the perceiver’s role in the process. Since the early person perception research the perceiver has been neglected in understandings of the impression formation process.

4.4 Conclusions

There is no doubt that in social cognition research categorization is understood as a process which conserves cognitive resources. The human perceiver is argued to have limited cognitive capacity and categorization is thought to conserve resources through information simplification and reduction. However, through simplification and use of overgeneralizations information is distorted. When we form impressions of others based on their group memberships these impressions are seen as inaccurate. It is the process at the heart of stereotyping - categorization - which is responsible for the distortion.

Individuation, on the other hand, is interpreted as inherently more accurate, because impressions are based on "idiosyncratic attributes" and the person's "actual characteristics". The fact that stereotypic impressions are distorted and individuated impressions are accurate means these two types of impressions cannot be formed through the same process. How can the same process produce distorted and accurate social perception? As argued in contemporary impression formation models (outlined in Chapter 3) there must be two separate impressions formation processes.

In this chapter, variables thought to mediate when one process or the other operates were also discussed. Motivational variables such as outcome dependence and accuracy goals should encourage the
perceiver to allocate more attention and form more individuated impressions. Importantly, it has not been clearly shown that there are overall increases in attention in outcome dependent conditions or conditions where an accuracy goal is provided. In the cognitive load literature, where available resources are manipulated directly, it has also been difficult to show that cognitive capacity is impeded where stereotypic impressions are predicted. In fact there is evidence that use of stereotypes can decrease with increased cognitive load.

Such mixed results would suggest a re-think of the theoretical argument that stereotyping occurs because perceivers have limited cognitive capacity. However, the theoretical argument that perceivers categorize and stereotype to preserve resources continues to direct research largely unscathed. In the next chapter, a completely different interpretation of the categorization process and social perception is outlined - a view presented by self-categorization theory.
5.1 Introduction

The picture which develops from the last two chapters is that in current models of impression formation there are two processes through which we can form impressions of others: a categorization-free process used when we form individuated impressions, and a categorization process used when we stereotype others. The way the categorization process is understood from the social cognition perspective further supports the argument that individuated and stereotypic impressions are based on distinct impression formation processes. Categorization is conceived as a process which: 1) is equated with the formation of stereotypic impressions; 2) distorts and biases perception; 3) involves the static application of category labels and associated attributes which are stored in memory; and 4) is undermined if more attention and cognitive resources are allocated to the target person and the impression formation process.

In this chapter a different approach is explored - one which focuses on the role of the perceiver - the self - in impression formation and categorization. Research specific to self-categorization theory is
the focus. As will be seen, the categorization process is understood in a fundamentally different way from this perspective. Categorization is portrayed as a dynamic, meaningful, context-dependent assessment of relevant similarities and differences which gives stimuli meaning and therefore necessarily forms the basis of all social perception. The relationship between the perceiver and reality is addressed directly. Self-categorization theory forms the basic theoretical orientation for the thesis so it is important that the theory and the historical context in which it has developed are outlined. The overall message of this chapter is that it is the way the categorization process is understood that differentiates self-categorization theory from the models of impression formation discussed thus far.

Self-categorization theory has been recently described as "a general analysis of the functioning of the categorization process in social perception and interaction which speaks to issues of individual identity as much as group phenomena" (Oakes et al., 1994, p. 94). In this definition two main themes emerge. The first theme is the distinction between "individual identity" and "group phenomena". A pervasive assumption of the theory and research discussed in this thesis to date is that the individual is the primary psychological reality and that social processes can be reduced to, and best explained by, individual processes (the work of Asch and Sherif is a clear exception; see Asch, 1952; Turner & Oakes, 1986, 1989, Turner & Oakes, 1997; Vinacke, 1957).

The emphasis on reducing psychological phenomenon to an individual explanation is reflected in the early person perception and
stereotyping research, and more recently, in the social cognitive analysis of stereotyping outlined in the last chapter. It is argued that to perceive others as individuals is accurate and valid, but to form impressions of others based on their group memberships reflects distortion and bias. The reality of the group and group differences are rejected without question. This chapter provides an overview of theory and research concerned with establishing the reality of the group, and reviews the debate surrounding whether group behaviour is distinct from individual behaviour.

The second theme, of the quote above by Oakes et al. (1994) concerns how the categorization process operates in social perception. There have been a number of significant developments in social perception and social cognition which have impacted on the way categorization is understood in self-categorization theory. Two studies, those by Tajfel and Wilkes (1963) and Tajfel, Flament, Billig and Bundy (1971) have had a far reaching impact. The former addressed issues of accentuation and categorization while the latter dealt with similar issues but in the context of the minimal group and intergroup behaviour. The work of Henri Tajfel was pivotal to both areas of research and the way in which the results from these studies were explained and elaborated led to social identity theory. An overview of social identity theory is provided.

Important progress in understanding categorization and intergroup behaviour was made through social identity theory and related research. In self-categorization theory these developments were further integrated and expanded. In attempting to understand
the psychological relationship between the self and the group a completely different conceptualisation of categorization emerged. Two assertions about the categorization process that are central to this thesis are: 1) that categorization is the only mechanism through which stimuli are given meaning and as such, 2) that the formation of individuated and stereotypic impressions of others must be based on the same categorization process. Both these points affect the way self-categorization theory is reviewed in this chapter. Other research, mainly from the cognition literature, which endorses the view that categorization is fundamentally a sense-making process is also reviewed. The first step though is to place these ideas in their historical, meta-theoretical context which begins with an examination of the reality of the group.

5.2 The reality of the group

Both social identity theory and self-categorization theory are described as non-reductionist theories of the social group. The group is seen to have a psychological reality which is distinct, valid and real and which cannot be reduced to, or explained by, individual processes. The primacy of the individual is rejected because, in many instances, "we do not act as isolated individuals but as social beings who derive an important part of our identity from the human groups and social categories we belong to" (Tajfel, Jaspars and Fraser, 1984, p. 5). Therefore, the formation of stereotypic impressions is not seen as necessarily distorted or biased. Group-based perceptions have the same capacity to reflect social reality as any other type of impression formation.
Debate over the social and psychological reality of the group has been referred to as the "essential problem" in social psychology (F. Allport, 1962; Asch, 1952; Oakes et al., 1994; Turner & Oakes, 1986). Throughout the history of social psychology there have been those who have accepted and others who have rejected the stance that groups are real entities which have a psychological reality. The way in which the reality of the group has been debated historically will be initially outlined (see Turner, 1987 for a more detailed discussion).

The pre-experimentalists like LeBon, McDougall and Freud theorised about the distinctive features of groups and all, to some extent, argued that group behaviour was irrational, driven by primitive instincts and emotions. Crowds were argued by LeBon (1920) to be characterised by a loss of individual personality, where individuals were no longer distinctive and heterogenous:

> whoever be the individuals that compose [the group], however like or unlike their mode of life, their occupations, their character, or their intelligence, the fact that they have been transformed into a group puts them in possession of a sort of collective mind which makes them feel, think and act in a manner quite different from that in which each individual of them would feel, think, and act were he in a state of isolation. (1920, p. 29)

The transformation from the individual mind to the collective mind was characterised by the expression of more primitive unconscious instincts:

> a man descends several rungs in the ladder of civilization.
Isolated, he may be a cultivated individual; in a crowd, he is barbarian - that is, a creature acting by instinct. He possesses the spontaneity, the violence, the ferocity, and also the enthusiasm and heroism of primitive beings. (1920, p. 36)

LeBon's analysis of a collective mind was interwoven with the observed features of short-lived groups like crowds or revolutionary groups and largely viewed as negative and inferior to individual thought and action.

McDougall (1921) made explicit an inherent contradiction in LeBon's work. That is, groups can be better or worse than their members, groups need not be inferior to individuals. In groups humans can act as barbarians but they can also achieve remarkable feats such as language, art, science, morality (Turner, 1987). McDougall stated that society "has ideals and aims and traditions loftier than any principles of conduct the individual can form for himself unaided" (McDougall, 1921, p. 20). Recognition of this paradox meant that a different picture of the group-mind developed, in which a distinction was drawn between organised groups and more spontaneous groups like crowds. The former are seen to lead to the realisation of human potentialities through society; "only by participation in group life does man become fully man, only so does he rise above the level of the savage" (p. 20). Behaviour in unorganised groups was characterised, in the same way as by LeBon, as "excessively emotional, impulsive, violent, fickle, inconsistent ... behaviour ... like an unruly child or an untutored passionate savage in a strange situation, rather than like that of its average member; and in worst cases it is like that of a wild beast, rather than like that of a
human being” (p. 45). Therefore, while McDougall recognised the positive nature of groups, notions of loss of individual identity or 'deindividuation', irrationality and increased emotion were also evident in his analysis.

The role of emotion and changes in identity are also central aspects of Freud's work. Consistent with Freud's theorising in other domains, group formation was seen as the product of sexual emotional ties and emotional bonds (Freud, 1959, first translated in 1922). Group members were seen as being infatuated with their leader who then became part of the member's ideal self. The shared relationship and emotional ties between the members and their leader was argued to generate mutual identification and suggestibility. Freud's work concentrated more on the specifics of group formation and the processes of emotional suggestion and identification.

A common theme shared by each of these pre-experimental approaches was the role of emotion and loss of one's individual personality. Interestingly, individual identity was seen as more rational, intelligent and civilized. When people act as a group member, for example, as part of a crowd, they were generally characterised as more barbarian, primitive and driven by instincts. All the pre-experimentalists, however, clearly recognised the existence of groups and the psychological impact of groups on individuals.

A different view emerged from behaviourists like Floyd Allport who rejected evidence of a group mind. In a behaviourist tradition, Allport argued that there is no distinct group psychology and that
evidence of group behaviour could be understood in terms of how people learn to act in different situations. He clearly stated that there is "no psychology of groups which is not essentially and entirely a psychology of individuals ... There is likewise no consciousness except that belonging to individuals" (F. Allport, 1924, p. 4). For Allport, the individual is the only psychological reality, a group is no more than the sum of the individual members that comprise it (Turner, 1987; Oakes et al., 1994).

As outlined in Chapter 2, Sherif and Asch developed a very different and more interactionist analysis of the group which, like Allport's, was experimental in nature. They argued that there was a reality to the group, and that groups could be psychologically represented. These group-based representations were not seen as irrational or the product of a "faulty" process. Through interaction between the individual and society individuals were psychologically changed (Turner & Oakes, 1986, 1989, 1997). It was argued that there were collective group products like norms, stereotypes and values created by groups rather than individuals.

Sherif (1936) clearly rejected Allport's argument that the group was merely the sum of individual components. Applying principles of Gestalt psychology, which assumed that higher order properties were different from their constituent parts, Sherif argued that people in interaction generated whole, new, social products. Groups were seen to have emergent properties, the product of interaction between the individual and the group, which could not be understood through examination of the individual members alone. When these collective
products were internalised the individual became a psychological group member. Sherif (1961) argued that "at the psychological level, then, the individual becomes a group member to the extent that he internalizes the major norms of the group ... his very identity and self-conception becomes closely tied to his status and role in the group" (p. 8).

As outlined in Chapter 2, the area where Sherif's work has had the most impact is in the area of intergroup relations. He advocated that to change group attitudes like stereotypes the relationship between the groups needed to be altered; "it is exceedingly difficult to change attitudes when intergroup relations remain the same ... attitudes toward other groups and images of them are products of particular relationships between groups, not their original cause" (Sherif, 1967, p. 25). The point that stereotypes are the product and not the cause of intergroup relations is important. Often in the current stereotyping literature it seems that stereotypes are seen to be responsible for intergroup relations, rather than a representation of the relationships between groups in society.

Asch (1952), like Sherif, argued that there were inherent group properties, that there was a "mutually shared psychological field" (p. 142). He focused on how group action was possible, and its impact on individuals. The psychological process associated with group behaviour was described as arising:

when each participant has a representation that includes the actions of others and their relations. The respective actions converge relevantly, assist and supplement each other only when
the joint situation is represented in each and when the representations are structurally similar. Only when these conditions are given can individuals subordinate themselves to the requirements of joint actions. These representations and the actions that they initiate bring group facts into existence and produce the phenomenal solidarity of group processes. (1952, p. 251-252)

He clearly argued that there was a "socially structured field within the individual" (p. 253) and that individuals could think and act in terms of this shared field.

Asch also explicitly understood the implications of the alternative theoretical argument which endorsed individualism and the belief that groups are the "shorthand expressions for the innumerable specific activities of individuals" (Asch, 1952, p. 241). He stated that if there was no group reality then "the logical conclusion would be that group facts are subjective constructions and that the facts of social life are the result of psychological error" (1952, p. 246). The themes of distortion, bias, and misrepresentation evident in current stereotyping literature support aspects of Asch's prophecy.

There are clearly those who argue that group behaviour can be reduced to individual behaviour and others like Asch and Sherif, who argue that group behaviour has distinct, emergent properties. However, debate surrounding the reality of the group and psychological group membership has declined since the 1950s and 1960s. There is evidence that the study of group phenomena became more dispersed with increased interest in intragroup behaviour and characteristics like group cohesiveness and interdependence (Hogg,
1992). However, mainly through the work of Henri Tajfel and colleagues, questions regarding the reality of the group and related explanations of intergroup and group behaviour continued to develop. These developments are the focus of the remainder of this chapter.

Two areas of research - accentuation effects influenced by the "New Look" tradition in perception and the minimal group studies - have impacted significantly on how group phenomena are understood and explained. Discussion of research relevant to each of these areas is followed by general overviews of both social identity theory and self-categorization theory (detailed reviews can be found elsewhere e.g., Hogg, 1992; Tajfel, 1972; Tajfel & Turner, 1986; Turner et al., 1987; Turner & Oakes, 1986, 1989; Turner et al., 1994).

5.3 Categorization and accentuation

Tajfel was initially interested in the judgement process and was heavily influenced by the 'New Look' tradition in perception (Bruner, 1958; Tajfel, 1980). A general principle of this approach was that "perception must be understood as an active interaction between the human organism and its environment" (Tajfel, 1980, p. 76). Up until this time, and in the spirit of much of the early person perception research (see Chapter 2), perception was defined in terms of the establishment of "close and invariant relationships between the sensory input and its perceptual outcome" (Tajfel, 1980, p. 76). As will be seen, Tajfel brought to the area of social psychology an understanding of the categorization process from perceptual and cognitive orientations.
Tajfel (1981) argued strongly against the view that categorization and stereotyping were irrational. It did not make sense to him that the human mind was considered efficient and effective in the physical world but when applied to the social environment it was seen as primitive and deficient. Tajfel wrote, "it is as if we are suddenly dealing with a different and strange animal that uses some of his abilities to adapt to some aspects of his environment, and is quite incapable of using them to adapt to others" (Tajfel, 1981, p. 128). Three functional cognitive processes - categorization, assimilation and the search for coherence - emerged from Tajfel's analysis (Tajfel, 1969). Categorization and the associated issue of accentuation has received much research attention.

5.3.1 Accentuation effects

A classic study by Tajfel and Wilkes (1963) provided evidence of the accentuation effects of categorization. The basic theoretical principle to emerge from this study was that "when a classification is correlated with a continuous dimension, there will be a tendency to exaggerate the differences on that dimension between items which fall into distinct classes, and to minimise these differences within each of the classes" (Tajfel, 1969, p. 83). Categorization was seen to accentuate or exaggerate the differences between groups so they are perceived "as if they are more similar and different than they could, in principle, be shown to be" (Oakes & Turner, 1990, p. 116, paraphrasing Tajfel 1972).

In the Tajfel and Wilkes (1963) study, subjects were asked to judge in centimetres the length of eight lines which varied in length by
a constant ratio. In the classified and randomly classified conditions the lines were labelled with an 'A' or a 'B'. In the classified condition there was a predictable relationship between the line length and the way the lines were labelled, with the four smaller lines labelled with a capital letter 'A' and the larger lines labelled with a 'B'. The labels in this study can be interpreted as the peripheral dimension and the length of the lines as the focal dimension. In the randomly classified condition half the lines were randomly labelled A and half B. In this condition there was no stable or predictable relationship between the length of the lines and the labels. In the unclassified condition the lines were presented without labels.

The results indicated that the difference in length between the lines labelled A and those labelled B was exaggerated in the classified condition. There was also some evidence that classification could lead to an accentuation of similarity in length among lines sharing the same label. The accentuation principle was supported by, and clearly articulated in, this study. There was evidence that the similarities within and differences between the two groups were accentuated when there was a "correlation" between the "classification" and the "continuous dimension" (Tajfel, 1969, p. 83).

The Tajfel and Wilkes (1963) study suggested that accentuation was an automatic, uncontrollable by-product of the categorization process. The accentuation effect has been shown to be robust and reliable not only with the categorization of physical stimuli but also with social stimuli (see also Eiser & Stroebe, 1972; McGarty & Penny, 1988). In support of Tajfel's analysis of the categorization process and
its potential application to real groups Tajfel, Sheikh and Gardner (1964) assessed Canadians' stereotypes of Indians. Canadian subjects listened to live interviews of two Indians and two Canadians and rated them on a number of scales. The two Indians were seen as more similar to each other on traits relevant to the Indian stereotype and the Canadians were seen as more similar on dimensions associated with the Canadian stereotype.

A number of other studies have been conducted which support categorization and accentuation with social stimuli. These studies are important because they establish a central point in terms of the empirical work in this thesis, that a fundamental aspect of categorization is accentuation. Some relevant studies will be elaborated. Doise and colleagues conducted a number of studies of accentuation. In one study, 10 year old boys and girls were asked to describe a member of one gender group under conditions where they did or did not anticipate describing a member of the other group. Intracategory similarity and intercategory difference were accentuated where there was awareness that both groups would be assessed (Doise, 1978). Additional evidence was found in a study by Doise, Deschamps and Meyer (1978, Experiment 2) where three ethnic groups in Switzerland (German, French and Italian) were described by Swiss school children on a set of 16 positive and negative traits. They found that in conditions where one of these groups was substituted with members from a different country (eg. Germans from Germany) the two Swiss groups were seen as more similar. In other words, the intragroup differences among Swiss linguistic groups was reduced when a non-Swiss outgroup was included in the frame of reference. A
series of studies by Wilder have also consistently found evidence of the accentuation effects associated with intragroup and intergroup categorizations (e.g., Wilder, 1981, 1986; see Oakes et al., 1994, Chapter 3 for a review).

Evidence that categorization and therefore stereotyping were part of normal cognitive functioning and were not due to personality factors or cognitive deficits (cf. Sherif, 1967) led to an increase in stereotyping research, particularly in work examining a link between cognitive processes and stereotyping. A study conducted by Taylor et al. (1978) also built on Tajfel's work and adopted a methodology that has since been widely used to examine accentuation effects (e.g., Hewstone, Hantzi & Johnston, 1991; Miller, 1986; Stangor, Lynch, Duan & Glass, 1992). Subjects listened to a discussion between six people and as each person was speaking a picture (supposedly) of the speaker was presented. The main dependent variable was whether subjects could recall "who said what". Three studies were conducted, one where the race of the discussants was varied (3 white and 3 black targets), another where sex rather than race was the basis of categorization (3 male and 3 female targets) and another where the sex of the six people in the discussion was varied from all male to all female.

In the first study where subjects listened to three white and three black men discuss a publicity campaign for a play, intraracial confusion was found to be higher than interracial confusion. In other words, subjects were able to more accurately indicate whether a black or white person made the statement than indicate which speaker
within a racial category had made a particular statement. The results were similar in a second experiment where the speakers were three females and three males. These two studies provide additional support for the accentuating effect of categorization.

The third study in this series demonstrated that when there are fewer members of one group compared to another (e.g., 1 female and 5 males), the member/s of the smaller group (e.g., the 1 female) are perceived as more assertive and influential and were rated in more stereotypical terms (e.g., more feminine). The findings are used to support the position that distinctive and infrequent information is attended to more by subjects (see Oakes, Turner & Haslam, 1991 for an alternative explanation based on the principles of fit; see also Biernat & Vescio, 1993; Oakes, 1994).

These studies provide widespread evidence to support the hypothesis that similarities within and differences between groups are accentuated following categorization. However, as identified in a study by McGarty and Penny (1988; see also McGarty & Turner, 1992), not all research has found inter-class and intra-class effects concurrently. They argued that the basis of categorization needs to be "perceptually meaningful or salient ... where the correlation between the peripheral and focal dimensions is high (high fit), and the categorization is readily available, accessible or otherwise useful for the categorization task" (p. 149). Importantly then, accentuation would seem to be sensitive to perceiver and contextual factors and may not be as automatic and uncontrollable as social cognitive theories of categorization would suggest.
The effect Tajfel and Wilkes (1963) identified with the judgement of lines has been broadly applied to perception of social groups and stereotyping. Tajfel himself clearly argued that stereotypes:

arise from a process of categorization. They introduce simplicity and order where there is complexity and nearly random variation. They can help us to cope only if fuzzy differences between groups are transmuted into clear ones, or new differences created where none exist ... in each relevant situation we shall achieve as much stereotyped simplification as we can without doing unnecessary violence to the facts. (Tajfel, 1969, p. 82)

The analysis that stereotyping was the product of a normal cognitive process that may introduce "simplicity and order" motivated a categorization approach to stereotyping which was outlined in detail in the previous chapter (e.g., Hamilton, 1979; Taylor 1981a, 1981b). The relationship between categorization and accentuation established by Tajfel also led to a reinterpretation of intergroup theory and research.

5.3.2 The minimal group

Tajfel was particularly interested in the conditions under which interindivdual behaviour shifts to intergroup behaviour. He initially set out to determine the minimal conditions necessary for intergroup discrimination (cf. Rabbie & Horwitz, 1969). In a now famous article by Tajfel et al. (1971) an experiment was reported which had been designed to minimise variables typically associated with ingroup favouritism and discrimination, such as a history of hostility, personal interaction or conflicts of interest. Schoolboys were divided into two
groups supposedly on the basis of their preference for the abstract painters Klee and Kandinsky. The assignment to groups was in fact random.

The groups were "minimal" in the sense that there was no social interaction between the groups or shared goals, and the boys did not know who was in their group. The main dependent measure was the allocation of rewards to other individuals defined only in terms of their code number and group membership (e.g., Klee or Kandinsky). Tajfel (1981) argued that the studies could also be seen as "maximal" in the sense that a situation was created where "members of one group act towards members of another in complete disregard of the individual differences between them. The (imposed) anonymity of the 'outsiders' insured in the experiments that no variations would occur in the way they were treated" (p. 241; see also Diehl, 1990).

Tajfel et al. (1971) found that subjects not only favoured their ingroup but used reward strategies which maximised ingroup gain relative to outgroup gain. The finding that with social categorization comes homogeneous group behaviour and ingroup bias has gained considerable support since this study was reported (e.g., Billig & Tajfel, 1973; Perdue, Doivo, Gurtman & Tyler, 1990; Spears & Manstead, 1989; see Tajfel, 1978b; Turner, 1978, 1980). The ongoing significance of this and related studies concerns the theoretical explanation which led to an alternative analysis of intergroup behaviour - social identity theory.
5.4 Social identity theory

One of the most important points which Tajfel (1972) identified from minimal group studies like the one outlined above was that the minimal group created a "meaningless" situation for participants, and that meaning could be imbued by acting in terms of group memberships. That is, participants could make a distinction between "their own 'group' and the other, between the two social categories in a truly minimal 'social system'. Distinction from the 'other' category provided ipso facto an identity for their own group, and thus some kind of meaning to an otherwise empty situation" (1972, pp. 39-40). The selective and meaning-giving features of the categorization process were recognised by Tajfel, who argued that the main function of categorization was to give the environment meaning and to afford action (Tajfel, 1972; see also Bruner, 1957a, 1957b). Also for Tajfel, categorization and group memberships enabled one to create and define one's place in the social world (Tajfel, 1978a).

Tajfel (1978c) recognised that there was a relationship between the individual and their group memberships. One aspect of this relationship is that individuals want to evaluate themselves positively, so ingroup and outgroup distinctions are made in such a way as to ensure positive distinctiveness between their own and other relevant outgroups. Tajfel (1978a) linked the individual self-concept and group behaviour further through the notion of social identity, described as "that part of the individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that group membership" (p. 63).
These ideas regarding the linkages between group behaviour and individual behaviour led to the development of the interpersonal-intergroup continuum. Behaviour at the intergroup extreme was characterised by membership in social groups, and behaviour at the interpersonal extreme was characterised as being based on "personal relations" and "individual characteristics" (Tajfel, 1979, p. 401). As outlined in the previous chapter, a similar differentiation forms the basis of the continuum (Fiske & Neuberg, 1990) and dual-process models (Brewer, 1988) but without general recognition that there is a distinctively group-based social reality. Both intergroup and interpersonal social reality were given equal status on the continuum by Tajfel. Through placement at opposite ends of the continuum they were also recognised as distinct.

Tajfel (1978a) developed a number of other continua in the theory of intergroup relations, such as social change and social mobility, and variability and social uniformity. All relate psychological processes to the reality of social conditions and their perceived social structure. But it was the explicit link made between the self and the group that provided fertile ground for further analysis of the essential problem in social psychology, the relationship between the individual and the group, between the psychology of the individual and the realities of group life (Tajfel, 1979; Turner et al., 1987; Turner & Oakes, 1986, 1989).

Turner (1982, 1984) developed aspects of social identity theory by proposing "a tentative and provisional theory of group behaviour in
terms of an identity mechanism" (1984, p. 526). The identity mechanism provided an important link between the interpersonal and intergroup ends of the continuum and elaborated a psychological basis for understanding individual and group behaviour. The interpersonal-intergroup continuum is transformed through the "identity mechanism" into a cognitive, social psychological theory of the group.

Turner's (1982, 1984) "self-stereotyping hypothesis" placed self-identification or self-categorization at the core of the theory. He argued that "it is the cognitive redefinition of the self - from unique attributes and individual differences to shared social category memberships and associated stereotypes - that mediates group behaviour" (1984, p. 528). The "cognitive redefinition" is the process which explains how individuals can psychologically be group members and "reinstates the group as a psychological reality and not merely a convenient label for describing the outcome of interpersonal processes" (Turner, 1984, p. 535).

Two aspects of self-definition or self-categorization - personal identity and social identity - were seen as the causal underpinnings of the different forms of social behaviour represented at the interpersonal and intergroup ends of the continuum, respectively. Personal identity encompassed personal identifications where specific idiosyncratic attributes emerge from one's sense of self as unique and different from all other people (relevant to the particular comparison being made). Social identity contained social identifications which are self-descriptions that emerged from social category memberships - the conception we have of ourselves which is attributable to our group
memberships (Tajfel, 1979; Turner, 1982, 1984; Turner et al., 1987). Aspects of the "identity mechanism" and "self-identification hypothesis" have been developed and refined in self-categorization theory.

5.5 Self-categorization theory

Social identity theory has proved to be a fruitful theory of group and intergroup behaviour. While positive self-evaluations and motivational variables were central to social identity theory, social cognitive variables are essential aspects of self-categorization theory. Self-categorization theory has been described as explaining "variations in how people define and categorize themselves and the effects of such variations" (Turner, 1991, p. 155; Turner et al., 1987). Through the identity mechanism and the self-identification hypothesis variations in self-identity became fundamental to the analysis of the reality of the group. It was necessary to explain and understand personal as well as social identity and the relationship between them. In light of Tajfel's "meaning" emphasis, and consistent with the meta-theoretical recognition of the reality of the group, a dynamic, context-dependent, categorization process was elaborated, to afford selective and relative but not oversimplified or impoverished perception (Turner & Oakes, 1997).

Rather than duplicating the number of reviews of self-categorization theory that already exist (e.g., Hogg, 1992; Turner, 1991; Turner et al., 1987; Turner & Oakes, 1986, 1989; Turner et al., 1994) in this section the theory will be elaborated in terms of two related themes central to this thesis. First, the way in which
categorization gives stimuli meaning will be described, and secondly
the role of categorization in the formation of individuated and
stereotypic impressions will be explored.

5.5.1 Categorization as a meaning-giving process

In self-categorization theory it is argued that all perception
involves categorization and that categorization itself is a process used
to give stimuli context-dependent meaning. There is agreement with
Bruner, who clearly stated that categorization is pivotal to all
perception in his paper "On Perceptual Readiness" (1957a). He argued
that "all perceptual experience is necessarily the end product of a
categorization process" (p. 124) and based this conclusion on two main
arguments. First, what is perceived is given meaning by the class of
objects with which it is grouped. Therefore unless an object is
categorized it is not possible for that object to have the "more
elaborated, connotative meaning" (Bruner, 1957a, p. 148) which stems
from giving stimulus information an identity based on previous
knowledge. Second, information that is not categorized cannot be
described or communicated; "if perceptual experience is ever had raw,
ie., free of categorical identity, it is doomed to be a gem serene, locked
in the silence of private experience" (Bruner, 1957a, p. 125).

A third point highlighted by Oakes and Turner (1990) is that
categorization does not involve merely placing structure on a formless,
invariant environment but involves abstracting real constancies and
variation in the stimulus environment in a way meaningful for the
perceiver (see also Bruner, 1957a, b; Neisser, 1987a; Rosch, 1978). Reality is not seen as homogeneous or uniform. There are an infinite
number of ways in which information in the stimulus environment can be categorized. The question is, why do we perceive some similarities and differences and not others (this issue has also been addressed in the cognitive literature which is discussed in the next section)?

The context-dependence of meaning is central to the way categorization is understood in self-categorization theory. Three interrelated factors - perceiver readiness, comparative fit and normative fit - define the selective, meaningful and relational properties of categorization. Perceiver readiness builds on Bruner's (1957) notion of accessibility and relates to "the tendency for certain ways of categorizing to be more accessible as a function of perceivers' expectations, motives, values and goals" (Oakes et al., 1994, p. 199). Past experiences also constrain the perceiver's "readiness" to construct particular categories. Importantly, the concept of perceiver readiness highlights the point that perception is relative to the perceiver; "that we see the world veridically but in a way that is useful and relevant to our goals and needs and stamped by our values and theories" (Oakes et al., 1994, p. 201; Turner et al., 1994; Turner & Oakes, 1997).

Perceiver readiness and the observed features of the stimulus environment interact to produce context-specific categorization. The principles of comparative fit and normative fit are also used to explain category salience. The meta-contrast principle is the basis of comparative fit (Turner, 1985). This principle states that in a particular context, stimuli will be categorized as the same when the average differences perceived between them (intra-class differences) are less than the differences between them and other stimuli (inter-
class differences) within the comparative context (Campbell, 1958; Codol, 1975; Rosch, 1978; Tajfel, 1969; Turner et al., 1987; Tversky, 1977). Categories are formed through a context specific assessment of similarity and difference. For example, an individual would be perceived as Australian to the extent that the differences between the individual and other Australians was perceived as less than the differences between Australians and Americans in that particular comparative context. Based on the principles of comparative fit, in another situation Australians and Americans could also be seen as more similar if, for example, non-English speakers were included in the frame of reference (see Haslam & Turner, 1992, 1993; Haslam, Turner, Oakes, McGarty & Hayes, 1992).

However, to categorise people as Australians compared to Americans there must not only be similarities within and differences between the groups, but these must be in the right direction on the relevant dimensions of comparison. So there is a content as well as a structural dimension to categorization. Normative fit relates to the content dimension, the direction or meaning of the categorization in a particular social environment (see Oakes, 1987; Oakes et al., 1991). It follows that people's normative beliefs play an important role in the perceptual selectivity of the categorization process; "similarities and differences must be consistent with our normative beliefs and theories about the substantive social meaning of the social category" (Turner et al., 1994, p. 455).

Self-categorization theory argues, then, that categories are formed to reflect the interaction between context-specific, relative
judgements of similarity and difference (comparative and normative fit) and the perceiver's background theories, experiences, motives and goals (perceiver readiness). This interpretation of the categorization process is clearly distinct from the view that categorization distorts reality through the static application of stored category labels and associated attributes. Importantly, though, self-categorization theory can explain stability (as well as fluidity) in the generation of particular categorizations (Turner et al., 1994). If the perceiver's relationship to reality is defined in the same way over time then the same categorization will result not because the cognitive system is static, or categories and attributes are stored in a fixed way, but because the categorization process used to form these judgements is rational, context-dependent and selective.

5.5.2 The formation of individuated and stereotypic impressions

Given that all perception is relative to the perceiver the impressions we form of others must depend on self-categorization - the way we perceive ourselves in a given context. These self-categorizations are defined by the principles of perceiver readiness and comparative and normative fit. But, as outlined earlier, self-categorization theory endorses and reflects a meta-theoretical tradition where veridical social perception involves both individuated and group perception. Both groups and individuals are seen "to exist objectively". Therefore, both personal (individual) and social (group) categorizations are necessary to reflect and represent social life (Oakes et al., 1994, p. 189).

Self-categorization theory recognises that it is valid and
accurate to perceive ourselves and others as individuals who are distinct and unique, and as group members, for example as Australians, who are similar and interchangeable with all other Australians. There are not only variations in the way we can categorise ourselves and others but also in the level of inclusiveness of categorization.

The concepts of personal and social identity have been developed further within self-categorization theory (Turner et al., 1987) to reflect "variations in how people define and categorize themselves" (Turner, 1991, p. 155) and are conceptualised within a hierarchical model of categorization (cf. Rosch, 1978; Turner et al., 1987). For theoretical clarity, three levels of self-categorization are identified; the superordinate (self as a human being), intermediate (self as a group member) and subordinate (self as an individual person). The superordinate level, is more inclusive than the intermediate and so on.

Social identity is represented at the intermediate level, where ingroup and outgroup categorizations are based on the similarities within and differences between social groups. Stereotyping and group-based impressions occur when we perceive others as ingroup members (members of the same group as self) in relation to outgroup members (members of a different group from self). Personal identity operates at the subordinate level where differentiations are made between oneself and other ingroup members. Thus, personal identity is based on individual differentiation within an ingroup context, where we accentuate differences between ourselves and others on relevant dimensions.
Importantly, based on the principles of comparative and normative fit, it is possible to predict when we will form stereotypic and individuated impressions of ourselves and others. It is argued that a shared social identity and stereotypic impressions can only develop when another relevant group (outgroup) exists to provide a contrast. When no such outgroup exists similarities and differences will be found within the group, leading to person-based (individuated) rather than group-based (stereotypic) impressions. As stated in Oakes et al. (1994):

meta-contrast can only find category identity for a group of stimuli by differentiating a contrasting category within the same context. A person cannot be defined as ingroup in contrast to outgroup where only ingroup members are available for comparison: a less inclusive level of (personal) self-categorization which contrasts the person with ingroup members must be found. (p. 190, see also Oakes, 1997)

The key point is that the same categorization process, but operating at different levels of abstraction, is used to form stereotypic and individuated impressions of ourselves and others. At the ingroup-outgroup level intra-group similarities and inter-group differences are accentuated, and if interpersonal comparisons are relevant this shifts to an accentuation of intra-individual similarities and inter-individual differences (Oakes et al., 1994; Simon, Pantaleo & Mummendey, 1995; Spears & Doosje, 1996). Stereotypic and individuated impressions are both products of categorization.

In summary, then, the formation of both stereotypic and
individuated impressions is seen as psychologically valid; "it is no more wrong to categorize people as groups than it is to categorize them as individuals" (Oakes et al., 1994, p. 189). The way in which we categorise ourselves and others is explained by the principles of perceiver readiness and comparative and normative fit. As will be seen in the next section there is correspondence between the way categorization is understood in self-categorization and recent work in the cognitive literature. Issues of similarity and of the importance of background theories are particularly relevant.

5.6 Understanding categorization from the cognitive perspective

Recent developments in the cognitive literature, which are outlined in this section, support the view that categorization is a sense-making, meaning-giving process. From a cognitive perspective, there is clear recognition that the perceiver's knowledge and theories about the world interact with the information available in a particular situation to give that situation meaning.

An approach to cognition has been developed which recognises "ecological" and "intellectual" factors in the perception process (Neisser, 1987b; see also Oakes et al., 1994, Chapter 5 for a review). Both of these concepts will be elaborated. The so called ecological factors refer to real similarities and differences in the stimulus environment on which basis categories are formed. Building on the work of Rosch and colleagues, reality is understood as heterogeneous; "combinations of attributes of real objects do not occur uniformly" (Rosch et al., 1976, p. 383). A good example of this point is the
category "bird", where it is a fact of the perceptual world that wings and feathers co-occur more frequently than wings and fur (Rosch, 1978, p. 29).

Categories are not seen to be arbitrary but formed through selective attention to real patterns of similarity and difference. The argument for real invariances relates directly to Bruner's (1957, p. 127) notion of fit:

Representation consists of knowing how to utilise cues with reference to a system of categories. It also depends upon the creation of a system of categories-in-relationship that fit the nature of the world in which the person must live.

There is an infinite number of ways in which the invariances in the world can be perceived in terms of similarity and difference. The essential question is why, out of all the possibilities, do we select particular categories and not others. Both Bruner and Rosch argued that categorization works to maximise information so the categories selected are those which are meaningful for the perceiver in a particular context (also see Medin, 1988).

Intellectual factors, such as "theories" about the way the world works, mediate the relationship between ecological factors and the categories which are used to represent reality. A model has been developed by Medin and colleagues where there is a progression away from the classical and probabilistic views of category formation towards a knowledge or theory-based approach (for summary see Medin, 1989; see also Nosofsky 1988, 1989). At the core of this shift is
a recognition of limitations with the notion of similarity. Problems with similarity are based on the traditional view, which drive prototype and exemplar models, that categories are fixed and defined by the similarity of component attributes (see Smith & Zarate, 1992 for a different interpretation of the exemplar view).

Murphy and Medin (1985) argued that the concept of similarity is generally under-defined. Is it not the case that all things could be seen as similar? They elaborated this point through the example that a plum and a lawn mower can be seen as similar because both are found on the same planet, weigh less than 1000 kg and can be dropped. In this example there is similarity but no meaningful categorization. Some similarities between objects give meaning while others are irrelevant. Meaning is argued to be dependent upon the situation and the perceiver's knowledge. People's theories about the stimulus environment direct the categorization process and define the basis on which objects will be compared; "concepts are coherent to the extent that they fit people's background knowledge or naive theories of the world" (Medin & Wattenmaker, 1987, p. 25; see also Murphy & Medin, 1985).

Evidence for this theory-based approach comes from rule induction studies such as those by Nakamura, Wisniewski & Medin (cited in Medin, 1989; see also Medin & Wattenmaker, 1987) where subjects rated pictures of people drawn by children. The way the pictures were categorized was affected by the information given about the children who drew them. Subjects were informed that the pictures were drawn by children who were: 1) from the farm or city; 2) creative
or non-creative; or 3) mentally healthy or emotionally disturbed. It was clear that the interpretation of the stimulus itself was affected by the various category labels. For example, when given the farm/city labels, farm children's drawings were each seen to reflect aspects of farm life. It was not that certain "given" features of the drawings increased or decreased in salience. Rather the stimulus information changed in meaning in order to support the categorization rules that were developed in each of the conditions. Based on evidence like this, the role of knowledge and theories in the categorization process is increasingly being recognised (e.g., Barsalou, 1987; Brown, P. & Turner, 1996; Klein & Kunda, 1992; Kunda, Miller & Claire, 1990; McCauley, 1987; McGarty & Grace, 1996; Medin & Wattenmaker, 1987; Michalski, 1989; Rips, 1989; Yzerbyt et al., 1997).

From a cognitive perspective, there is clear recognition that the perceiver's knowledge and theories about the world interact with the information available to give that information meaning. Categorization is seen as a selective process where theories are used and developed to explain relevant variations in the stimulus environment. The analysis of categorization in self-categorization theory, and the work of Bruner, Rosch, Neisser, Medin and colleagues, suggest that categorization is not a process which distorts information. Rather it identifies categorization as the route to meaningful perception.

5.7 Conclusions

Three important points emerge from this chapter which are central to the thesis. Firstly, in the section on the reality of the group
a fundamentally different role of the group in impression formation and social behaviour has been outlined. The argument was presented that reality is not just made up of individuals, but that groups exist and therefore need to be psychologically represented. As outlined by Asch and Sherif, the internalization of group norms can transform individual behaviour into group behaviour. This position challenges the classic individualism which has shaped past and present impression formation theory and research. Through the work of Henri Tajfel and colleagues questions regarding the reality of the group continued to develop and have led to social identity theory and self-categorization theory. Both theories were outlined but with a focus on the way categorization is understood and how categorization relates to the formation of individuated and stereotypic impressions.

Secondly, categorization is understood in self-categorization theory as a meaning-giving process used to make relative, context-dependent judgements of similarity and difference from the perceiver's perspective. The view of categorization as a meaning-giving process stands in direct opposition to the position taken in the impression formation models, outlined previously, that to categorize and stereotype is distorted, biased and inaccurate. In self-categorization theory, and the cognitive literature reviewed, a complex analysis of the relationship between the perceiver and the stimulus environment has been developed.

Thirdly, because of the preceding two points that 1) both individuals and groups are seen to exist objectively and 2) categorization is a meaning-giving process which underlies all social
perception, it follows that (3) both person and group perception must involve categorization. Importantly, the same categorization process but operating at different levels of abstraction is argued to be used when we form individuated and stereotypic impressions of others. Self-categorization theory makes some very specific predictions regarding when we will individuate and stereotype ourselves and others.

There are clearly two conflicting accounts of the impression formation process, and of variations in impressions formation. On the one hand, it is argued in current impression formation models that there are two impression formation processes and that the allocation of attention and cognitive resources determines when individuated and stereotypic impressions of others are formed. On the other hand, it is argued in self-categorization theory that all impressions are formed through the same categorization process but that it is variation in the level of abstraction - interpersonal or intergroup - that determines whether individuated or stereotypic impressions are formed, respectively. The juxtaposition of these two perspectives defines the aims of the empirical work in this thesis. The aims are: 1) to determine whether attention or contextual variations can best account for variations in impression formation (chapters 6 and 7); and 2) to investigate whether both stereotypic and individuated impressions are formed through the same categorization process (chapters 8 and 9). Details of the empirical issues, methods of investigation and the findings are the focus of the next four chapters.
6.1 **Introduction**

In the previous theoretical chapters two main perspectives on impression formation have been detailed: the social cognition attention model and self-categorization theory. A number of issues emerge from the differences between these perspectives. A crucial question is under what conditions are individuated and stereotypic impressions formed? Are variations in impressions determined by the comparative context, either interpersonal or intergroup? Does stereotyping increase when perceivers are unmotivated to allocate attentional resources? These questions are directly investigated in the first experiment of the thesis reported in this chapter.

Motivational factors (interdependence) and comparative context (interpersonal, intergroup) are included as variables in the experimental design. In the experiment subjects had to form an impression of a **constant target** - their opponent. Feedback about subject's own group membership was varied in order to manipulate comparative context in line with self-categorization theory. The subject and opponent were members of the same group in interpersonal conditions but members of opposite groups in intergroup
conditions. The salience of the intergroup context was also manipulated to be high or low. In the intergroup high salience condition comparisons between the subject and opponent were more explicitly defined in ingroup-outgroup terms than in the low salience condition. Therefore, it was predicted based on self-categorization theory that there would be increased stereotyping in the high salience condition.

The other independent variable was interdependence. Based on Fiske and colleagues' predictions the aim was to motivate subjects, through a competitive interdependence manipulation, to pay more attention in interdependent compared to non-interdependent conditions. Competitive interdependence was manipulated in this experiment using the same method as Ruscher et al. (1991; see Chapter 4). Participants could win a prize of the same value either by competing directly with their opponent or by scoring above the 50th percentile.

In the Ruscher et al. (1991) study subjects had to form impressions of team mates and opponents in the intergroup condition but only opponents in the interpersonal condition. As outlined in Chapter 4, Ruscher et al. argued that stereotypic impressions were formed in their intergroup conditions, even when the subject and target were interdependent, because subjects had two foci of attention. In the present study all subjects had to form an impression of one opponent. This means that there is only one focus for attention in both the interpersonal and intergroup conditions and any variations in attentional demand other than that associated with the manipulation
of interdependence are controlled. If interdependence is successfully manipulated then according to the attention model subjects should form individuated impressions in the interdependent condition and stereotypic impressions in the non-interdependent condition.

In previous research where motivational factors have been manipulated, a main dependent variable has been the time subjects spend looking at information about the target - more specifically, gaze duration. A relationship has been assumed between longer gaze durations for the counter-stereotypic information provided to describe the target and the formation of more individuated impressions. In addition to the attention measure, comments made by subjects while forming impressions have been assessed (e.g., Fiske et al., 1987; Ruscher & Fiske, 1990; Ruscher et al., 1991). However, there has been limited interest in the overall content of the impression itself and whether time spent looking at stereotype inconsistent and stereotype consistent information actually does lead to the formation of more individuated and stereotypic impressions, respectively. For this reason the focus in this study is on the actual content of the impression in order to assess directly the outcome of the impression formation process.

In summary, two main predictions can be derived based on the different theoretical perspectives outlined. Self-categorization theory predicts that the content of impressions will be less stereotypic in interpersonal compared to intergroup contexts. Further, there should be more stereotyping in the intergroup high salience compared to the intergroup low salience condition because differentiation between the
ingroup and outgroup is enhanced. The attention model argues that interdependent subjects will be motivated to allocate more attention to the impression formation process and will therefore, form individuated impressions. On the basis of the attention model it would be predicted that more individuated impressions will be formed in the interdependent compared to the non-interdependent condition.

6.2 Method

6.2.1 Subjects and design

Thirty-four female and twenty-four male students from the Canberra Institute of Technology participated in the study. Participants were randomly assigned to one of six conditions in a 2 (attention: interdependent, non-interdependent) x 3 (comparative context: interpersonal, intergroup low salience, intergroup high salience) between subjects design. Participants completed both a pre-test and the main study.

6.2.2 Procedure

The study was described as an investigation of problem solving and the effects of competition. It was explained that the study had two stages and that subjects would be required to complete a number of problem solving tasks. In stage one, subjects were told that they would complete four problem solving tasks and that their responses on these tasks would be used to develop individual profiles that would be used in the next phase of the study. On completion of these tasks, which included a description of the way they solved problems, it was explained that their responses would also be used to determine their own individual problem solving style.
Subjects were told that recent problem solving research had shown that there were a number of common strategies used to solve problems effectively. One strategy - lateral problem solving - was described as "making associations with other ideas not necessarily directly or obviously related to the problem at hand and could be characterised as innovative and adaptive". Alternatively, logical problem solving was described as "solving problems by having one integrated train of thought where ideas develop in a linear fashion, so solving problems in a reasoned, rational way". Subjects, therefore, expected at the next stage of the study to be given information about whether they had a logical or lateral problem solving style.

In the second stage of the study (typically one week after the pre-test) subjects were told that their responses to the pre-test had been scored and their problem solving style assessed. Further, they were told that similar tasks to those in stage one of the study would be completed but this time in the presence of another person - their opponent. All participants were informed that they would be involved in a competition for a prize of $20.00.

At this point the comparative context variable was manipulated. Following self-categorization theory, the aim in the interpersonal condition was to create a purely ingroup context within which interpersonal differentiation would be most salient. In this condition subjects were told that everyone in the session had a lateral problem solving style and no reference was made to logical problem solving. In contrast subjects in the intergroup conditions were led to believe that
some of those present were lateral and others logical problem solvers.

Subjects were then handed a booklet. The front page explained how the subject's opponent had been selected. In the interpersonal and intergroup low salience conditions subjects were told that their opponent had been chosen randomly from those in the session. In the intergroup high salience condition, salience was increased by informing subjects that an aim of the study was to compare lateral and logical problem solving. Subjects were told they had been assigned to groups made up of others with the same problem solving style as themselves and that their opponent would be a member of the opposite group.

Subjects were directed through the first pages of the booklet where they were given information about: a) their own problem solving style; b) how they could win the prize; and c) their opponent’s problem solving style. As outlined above, in interpersonal conditions subjects were told that all those in the session, which included their opponent, had a lateral problem solving style. In order for all subjects to form an impression of a constant target, subjects in intergroup conditions were informed they had a logical problem solving style.

Competitive interdependence was manipulated, using the technique adopted by Ruscher and Fiske (1990; Ruscher et al., 1991; also Erber & Fiske, 1984). It was outlined that there were two ways subjects could win the prize of $20.00. In the interdependent condition subjects were told that their score would be compared with their opponent’s and that the person with the highest score would be entered into a draw for the prize. The other half of the subjects, those in the
noa-interdependent condition, were informed that their score would be compared with all of the other scores and that those scoring above the 50th percentile would be entered into the draw for the prize. In the intergroup high salience condition, where subjects had been explicitly informed they were assigned to groups, subjects were told that an average score for their group and their opponent's group would be calculated and the group with the highest score, or groups scoring above the 50th percentile, would be entered into the draw.

Subjects were then asked to read through the information provided about their opponent. In all conditions the opponent was described as having a lateral problem solving style and six handwritten statements, supposedly provided during the pre-test problem solving tasks, were provided. The statements were actually developed from piloting such that two were stereotypic of being a lateral problem solver ("brainstorm different ideas" and "be open to novel solutions") two were counter-stereotypic ("constrain options" and "use ordered thinking") and two were neutral statements ("try not to get uptight" and "be up front with yourself and others about the problem"). Importantly, all subjects were provided with exactly the same information about their opponent.

A number of questions followed in which subjects were asked about their feelings towards the competition and about their impression of their opponent. Subjects were led to believe that once they had provided answers to these questions the competition would take place. In fact on completion of the questionnaire subjects were informed there would be no competition phase. Participants were
debriefed about the study’s aims and objectives and all participants were entered into a draw for a prize of $20.00.

6.2.3 Materials

The materials consisted of two booklets. The first, used in the pre-test phase, incorporated four different problem solving tasks and was ostensibly used to determine subjects’ problem solving style - logical or lateral. The second booklet was used in the study proper and incorporated the main manipulations, the dependent measures and manipulation checks. After subjects had read the information provided about the main manipulations and their opponent (as outlined above) they were asked to answer a number of questions.

Initially subjects were asked the following six questions and they had to mark a response on nine point scales with appropriately labelled ends. The first two questions - 1) How much are you looking forward to the competition with your opponent? 2) How well do you think you are going to perform on the problem solving tasks in comparison to your opponent? - were included to give an impression of genuine interest in the competition. The next four questions were designed to examine the perceived similarity between the subject and their opponent: 3) How similar do you think you and your opponent are to each other? 4) To what extent do you think you and your opponent would have things in common? 5) How far do you think you and your opponent would agree with each other on how to solve problems? 6) How far do you think you and your opponent would agree with each other in general?
In order to assess the actual content of impressions subjects were given a Katz-Braly type checklist task (Katz & Braly, 1933; see Haslam et al., 1992). A list of 15 words was presented and subjects had to underline those that they felt were typical of their impression of their opponent. The list consisted of five stereotypic (consistent), five counter-stereotypic (inconsistent) and five neutral words associated with lateral problem solving which had been previously piloted. Subjects then had to choose the five words out of those underlined that were most typical of their impression and estimate the percentage of lateral problem solvers who had each of the characteristics (confusion about whether these percentages needed to sum to 100 or not meant that the results could not be properly analysed so the measure will not be discussed further). A response scale measure was also included to try and assess whether impressions were more individuated or stereotypic: 7) Think about your general impression and feelings about your opponent. How far do you think your impression and feelings are related to your opponent’s individual personality or characteristics that are shared by lateral problem solvers as a group?

Subjects then moved on to complete a number of other questions assessing how they felt about others with the same problem solving style: 8) How similar do you think you are to other lateral problem solvers? 9) How much do you think you have in common with other lateral problem solvers? 10) How representative do you think you are of other lateral problem solvers? and 11) How much do you like being a member of the lateral style group? In the intergroup conditions 'lateral problem solver' was replaced with 'logical problem solver' where applicable.
In order to assess the impact of some subjects being told they had a lateral and others a logical problem solving style subjects were asked "To what extent do you agree that you are a lateral (logical) problem solver?" Two questions were also designed to assess the perceived interdependence between the subject and target: 13) How concerned are you about how your opponent is going to perform? 14) To what extent do you think your opponent's score will determine your chances of going into the draw to win the prize? Finally, as a measure of the type of information remembered in the impression formation process subjects were asked to recall as much information as they could about their opponent.

6.3 Results

6.3.1 Manipulation checks

The mean responses on the item which assessed the extent to which subjects agreed they had the problem solving style assigned to them (either logical or lateral) was analysed in a 2 (interdependence) x 3 (comparative context) between subjects analysis of variance (ANOVA) which revealed no significant effects. Overall, subjects agreed with the feedback regarding their problem solving style ($M = 7.14$; see Table 6.1).

The items assessing the interdependence manipulation - 1) how concerned subjects were about their opponents performance, and 2) the perceived influence the opponent would have on subjects' chances of entering the draw for the prize - were analysed in a 2 (interdependence) x 3 (comparative context) between subjects
multivariate analysis of variance (MANOVA). Unless otherwise stated in this and subsequent cases the univariate effects were identical to the multivariate results. Using the Wilks criterion the only significant multivariate effect was the main effect for interdependence ($F(2, 51) = 8.80, p < .001$).

Table 6.1

Means for manipulation check measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Interdependent</th>
<th>Non-interdependent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>GL</td>
</tr>
<tr>
<td></td>
<td>(N=13)</td>
<td>(N=6)</td>
</tr>
<tr>
<td>Agree problem-solving style</td>
<td>7.69</td>
<td>6.17</td>
</tr>
<tr>
<td>Concerned opponent’s performance</td>
<td>5.31</td>
<td>4.00</td>
</tr>
<tr>
<td>Opponent influence draw for prize</td>
<td>7.92</td>
<td>6.67</td>
</tr>
</tbody>
</table>

Note: $P = $ interpersonal, $GL = $ intergroup low salience, $GH = $ intergroup high salience.

Examination of the univariate F-tests revealed no significant effects on the first item ($F(1, 52) = 2.34, p > .10$). However, the pattern of the means suggests that subjects were more concerned about their opponent’s performance in the interdependent compared to the non-interdependent condition ($M_s = 4.96$ and $3.74$, respectively). On the second item, the main effect for interdependence was significant ($F(1, 52) = 17.73, p < .001$). As predicted, it was found that subjects felt their
opponent would affect their chances more in the interdependent than non-interdependent condition ($M_s = 6.89$ and 4.52, respectively). These results indicate that the study produced conditions under which those who endorse the attention model (e.g., Ruscher et al., 1991) would expect subjects to be motivated to pay more attention and form more individuated impressions.

### 6.3.2 Type of impression

The aim of the checklist measure was to assess the content of impressions by examining the frequency with which different types of words were selected to describe the opponent. The number of stereotypic, counter-stereotypic and neutral words subjects selected as most typical of their impression of their opponent were summed in each condition. These frequencies were adjusted for variation in cell sizes (by dividing the total number by $n$ for that cell and then multiplying by the average cell size). A measure of the relative use of stereotypic compared to counter-stereotypic information was developed by subtracting the frequency for counter-stereotypic words from that for stereotypic words.

The relative measure of stereotypicality as well as the frequencies for stereotypic, counter-stereotypic and neutral word selection were each analysed using the log-linear technique. For comparative context and interaction effects, the analysis was based on an initial contrast between the responses of subjects in the interpersonal condition and those in the combined intergroup (group) conditions followed by a comparison between scores in the intergroup low and intergroup high salience conditions (see Table 6.2).
Table 6.2

Frequencies and z scores for the relative stereotypicality measure and selection of stereotypic, counter-stereotypic and neutral information.

<table>
<thead>
<tr>
<th></th>
<th>Interdependent</th>
<th>Non-interdependent</th>
<th>Z-scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>GL</td>
<td>GH</td>
</tr>
<tr>
<td>Stereotypic</td>
<td>22.31</td>
<td>27.39</td>
<td>33.83</td>
</tr>
<tr>
<td>Counter-stereotypic</td>
<td>8.92</td>
<td>3.22</td>
<td>3.63</td>
</tr>
<tr>
<td>Neutral</td>
<td>17.10</td>
<td>17.72</td>
<td>10.80</td>
</tr>
</tbody>
</table>

Note: + p < .05 (z-crit = 1.96); * p < .01 (z-crit = 2.36); underlined p < .10 (z-crit = 1.64); P = interpersonal; GL = intergroup low salience; GH = intergroup high salience; A = PvGUGH; B = GLvGH; C = interdependent v non-interdependent; D = PpvGUGH; E = GLvGH.

For the relative stereotypicality measure there was a significant main effect for comparative context on the contrast between the interpersonal and combined group condition (z = 3.10, p < .01). As predicted, more stereotypic relative to counter-stereotypic information was selected in the group condition than the interpersonal condition (Frequencies (fs): 24.16 and 11.53, respectively; see Figure 6.1). The pattern of results on the relative measure also suggest that there is more relative stereotyping in the intergroup high salience than the intergroup low salience condition. However, the main effect for the contrast comparing these two conditions was not significant (z = 1.22, p > .10).
There was also a marginally significant main effect for comparative context in the analysis involving the selection of stereotypic words \((z = 1.77, p < .10)\). More stereotypic words were selected in the combined group condition compared to the interpersonal condition \((f^2 = 29.40 \text{ and } 21.26, \text{ respectively; see Figure 6.2})\). There were no significant differences between the intergroup low and intergroup high salience conditions for the selection of stereotypic words.
For counter-stereotypic words there was a significant main effect for comparative context between the interpersonal and combined group condition ($z = 2.04, p < .05$; see Figure 6.3). More counter-stereotypic words were selected to describe impressions in the interpersonal ($f = 9.74$) than in the group condition ($f = 5.24$; see Figure 6.3). For the selection of counter-stereotypic words there were no significant differences found between the intergroup low salience and intergroup high salience conditions.

The interdependence variable produced no significant effects. In fact the highest $z$-score comparing interdependent and non-
interdependent conditions was 1.45 for counter-stereotypic words. In the interdependent condition counter-stereotypic words were selected at a frequency of 5.26 compared to 8.23 in the non-interdependent condition. This pattern of results is in fact in the opposite direction to that predicted by Ruscher and colleagues (see Figure 6.3).

![Figure 6.3. Frequency of counter-stereotypic word selection](image)

A parametric measure was also developed to assess the content of impressions. A stereotyping score for each subject was generated by giving subjects a score of +1 for selecting each stereotypic word as most typical of their impression of their opponent, a score of -1 for each counter-stereotypic word and a score of 0 for each neutral word (a technique commonly used in the analysis of Katz-Braly content e.g., Haslam et al., 1992). Scores for the five traits were summed, therefore
each subject could have a score between +5 and -5, a higher score reflecting more stereotyping. The stereotyping score was analysed by means of a 2 (interdependence) x 3 (comparative context) ANOVA. The only significant result was a main effect for comparative context (F(2, 52) = 4.75, p < .05). Two t-test contrasts for comparative context were conducted in the same way as specified in the log-linear analysis (using protected t-tests alpha = .01). There was increased stereotyping in the combined group condition compared to the interpersonal condition (Ms = 2.50 and 1.17, respectively, t(56) = -2.86, p < .01) but the means in the intergroup low salience and intergroup high salience conditions did not differ significantly (Ms = 2.14 and 2.75, respectively, t(32) = -.98, p > .10).

6.3.3 Recall of information

Subjects were also asked to recall as much information as they could about their opponent. The statements recalled were coded as being stereotypic, counter-stereotypic or neutral by an independent coder and the experimenter with an agreement rate of above 85 percent. The independent coder's frequencies were used in the analysis.

The number of statements recalled were adjusted for unequal cell sizes and analysed in the same way as the checklist frequencies. A measure of the relative recall of stereotypic compared to counter-stereotypic statements was calculated for each condition. This relative measure was analysed using the log-linear technique, as were the frequencies with which stereotypic, counter-stereotypic and neutral statements were recalled across conditions (see Table 6.3).
Table 6.3

Frequencies and z-scores for the relative recall measure and recall of stereotypic, counter-stereotypic and neutral information.

<table>
<thead>
<tr>
<th></th>
<th>Interdependent</th>
<th>Non-interdependent</th>
<th>Interaction effects</th>
<th>Main effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>GL</td>
<td>GH</td>
<td>P</td>
</tr>
<tr>
<td>Relative measure</td>
<td>10.00</td>
<td>16.41</td>
<td>15.79</td>
<td>5.48</td>
</tr>
<tr>
<td>Stereotypic</td>
<td>16.67</td>
<td>21.10</td>
<td>19.43</td>
<td>13.16</td>
</tr>
<tr>
<td>Counter-stereotypic</td>
<td>6.67</td>
<td>4.69</td>
<td>3.64</td>
<td>7.68</td>
</tr>
<tr>
<td>Neutral</td>
<td>10.67</td>
<td>8.21</td>
<td>10.93</td>
<td>13.16</td>
</tr>
</tbody>
</table>

Note: * p < .01 (z-crit = 2.36) + p < .10 (z-crit = 1.64); P = interpersonal; GL = intergroup low salience; GH = intergroup high salience; A = PvGL/GH; B = GLvGH; C = interdependent v non-interdependent; D = PvGL/GH; E = GLvGH.

The only significant effects to emerge from these analyses concerned the comparative context manipulation. Analysis of the relative recall measure revealed that significantly more stereotypic relative to counter-stereotypic information was recalled in the combined group condition ($f = 16.01$) than in the interpersonal condition ($f = 7.74$; $z = 2.49$, $p < .01$; see Figure 6.4). There was also a tendency for counter-stereotypic statements to be better recalled in the interpersonal condition ($f = 7.18$) compared to the combined group condition ($f = 4.03$; $z = 1.66$, $p < .10$). No significant differences were evident between the intergroup low salience and intergroup high
salience conditions.

Figure 6.4. Relative recall of stereotypic versus counter-stereotypic information

For parametric analysis of the information recalled, a recall score was developed. As with the stereotyping score, subjects were given a score of +1 if they recalled a stereotypic statement, a score of -1 if they recalled a counter-stereotypic statement and a score of 0 if they recalled a neutral statement. These scores were summed for each subject and analysed in a 2 (interdependence) x 3 (comparative context) design.
context) ANOVA. A main effect for comparative context was the only significant finding ($F(2,52) = 4.31, p < .05$). Two contrasts for comparative context were conducted. Subjects recalled more stereotypic statements in the combined group condition ($M = 1.53$) than the interpersonal condition ($M = .58, t(56) = -3.00, p < .01$). There was also a non-significant tendency for more stereotypic information to be recalled in the intergroup high salience ($M = 1.65$) than intergroup low salience condition ($M = 1.36; t(32) = -.65, p > .10$).

6.3.4 Analysis of other measures

(i) Influence on impressions

Subjects were asked directly whether they thought their impression of their opponent was based on the opponent's individual personality or characteristics associated with their problem solving style (where 1 = individual personality, 5 = both and 9 = group characteristics). A 2 (interdependence) x 3 (comparative context) ANOVA revealed no significant effects on this item (see Table 6.4).

(ii) Attitude to competition

Subjects were asked about their attitudes to the competition - how much they looked forward to the competition (general attitude) and how well they thought they would perform (anticipated performance). Each measure was analysed in a 2 (interdependence) x 3 (comparative context) between subjects ANOVA. A significant main effect for comparative context emerged on the general attitude to competition measure ($F(2, 52) = 9.53, p < .001$) and anticipated performance measure ($F(2, 52)= 4.65, p < .05$). Unless otherwise specified in this and subsequent cases Newman-Keuls analysis is used.
to assess differences between means. Subjects looked forward to the competition least and thought they would perform less well in the intergroup low salience condition compared to the other two conditions.

(iii) Evaluations of ingroup members

Four items were designed to assess how subjects perceived others who had the same problem solving style as their own. These measures were analysed in a 2 (interdependence) x 3 (comparative context) between-subjects MANOVA (see Table 6.3). No significant multivariate effects were found. Only one of the univariate F-tests was significant at the .05 level. There was a significant main effect for comparative context on the "like" measure (F(2, 52) = 3.73, p < .05). Subjects liked being a member of their own problem solving group more in the interpersonal and intergroup high salience conditions than in the intergroup low salience condition (Ms interpersonal = 6.96; intergroup high salience = 6.50; intergroup low salience = 5.43).

(iv) Similarity to opponents

Four items were also designed to assess subjects' perceived similarity to their opponent. These measures were analysed in a 2 (interdependence) x 3 (comparative context) between subjects MANOVA. The multivariate main effect for comparative context was the only statistically significant result to emerge from this analysis (F(8, 98) = 2.80, p < .01). On all four univariate tests subjects in interpersonal conditions (who had the same problem solving style as their opponents) saw themselves as generally more similar to their opponent than did those in the intergroup conditions (see Table 6.4).
### Table 6.4

**Means for other response scale measures.**

<table>
<thead>
<tr>
<th></th>
<th>Interdependent</th>
<th></th>
<th>Non-interdependent</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>GL</td>
<td>GH</td>
<td>P</td>
</tr>
<tr>
<td><strong>Influence on impression</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality or Group factors</td>
<td>5.85</td>
<td>6.00</td>
<td>5.50</td>
<td>5.70</td>
</tr>
<tr>
<td><strong>Attitude to competition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General attitude</td>
<td>6.62</td>
<td>5.17</td>
<td>6.88</td>
<td>6.73</td>
</tr>
<tr>
<td>Anticipated performance</td>
<td>6.31</td>
<td>5.67</td>
<td>6.75</td>
<td>6.46</td>
</tr>
<tr>
<td><strong>Evaluation of ingroup members</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Similar</td>
<td>7.31</td>
<td>6.00</td>
<td>6.75</td>
<td>5.91</td>
</tr>
<tr>
<td>Common</td>
<td>7.08</td>
<td>5.33</td>
<td>6.75</td>
<td>6.20</td>
</tr>
<tr>
<td>Represent.</td>
<td>6.15</td>
<td>5.00</td>
<td>6.25</td>
<td>5.64</td>
</tr>
<tr>
<td>Like</td>
<td>7.46</td>
<td>4.83</td>
<td>7.13</td>
<td>6.36</td>
</tr>
<tr>
<td><strong>Similarity to opponents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Similar</td>
<td>6.62</td>
<td>3.33</td>
<td>4.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Common</td>
<td>6.62</td>
<td>4.67</td>
<td>5.38</td>
<td>5.36</td>
</tr>
<tr>
<td>Agree problem-solv.</td>
<td>6.31</td>
<td>4.83</td>
<td>3.38</td>
<td>5.73</td>
</tr>
<tr>
<td>Agree in general</td>
<td>6.54</td>
<td>5.83</td>
<td>4.88</td>
<td>5.73</td>
</tr>
</tbody>
</table>

#### 6.4 Discussion

The results in this study suggest that as predicted from self-categorization theory, the tendency to individuate or stereotype varied
with the salient level of abstraction - interpersonal versus intergroup. Subjects were found to use more counter-stereotypic information to describe their opponent when the subject and opponent shared the same problem solving style and where within-group comparisons were contextually relevant. On the other hand, more stereotypic information was incorporated into the impressions when opponents had the opposite problem solving style as subjects and intergroup comparisons were salient. The recall measures also revealed that subjects recalled more counter-stereotypic information about their opponent in interpersonal conditions and more stereotypic information in intergroup conditions.

In addition, the trends in the data suggest that subjects formed more stereotypic impressions in the intergroup high salience than the intergroup low salience condition. However, the results found in these two intergroup conditions did not generally differ significantly. It seems, contrary to predictions, that defining the competition between the subject and target explicitly in ingroup-outgroup terms did not impact on the salience of the intergroup context. Describing the targets as having the opposite problem solving style to subjects was sufficient to invoke intergroup comparisons and increase the formation of stereotypic impressions in the group conditions.

Unlike in previous studies where motivational factors have been manipulated, differential use of stereotype consistent and stereotype inconsistent information did not depend on whether the perceiver and the perceived were outcome dependent or not. Checks to assess the interdependence manipulation were explicitly included in this study.
and the results indicated that subjects were more concerned about their opponent, and believed that their opponent could influence their prize winning chances more in the interdependent than non-interdependent condition. Subjects did perceive that their outcomes depended more on their opponents in interdependent conditions, but there was no evidence of more counter-stereotypic information being used, or more individuated impressions being formed, in interdependent conditions.

Theoretically, from a cognitive resources perspective on the formation of stereotypic and individuated impressions, subjects who were outcome dependent should have been motivated to pay more attention in order to form more "accurate" individuated impressions. Outcome dependency should have promoted "individuation via an increase in perceivers' accuracy-driven attention" (Pendry & Macrae, 1994, p. 306; Neuberg & Fiske, 1987). The fact that interdependence was successfully manipulated but had no impact on the types of impressions formed across conditions therefore raises questions about: 1) the interpretation of Ruscher et al.'s (1991) findings and more generally, 2) the different dependent variables used to assess impression formation. Both of these issues will be discussed.

Ruscher et al. (1991) found in their study, which involved only interdependent conditions, that stereotypic rather than individuated impressions were formed of opponents in the intergroup condition (see Chapter 4). Ruscher et al.'s analysis was that stereotyping occurred in intergroup contexts because of cognitive capacity limitations. Subjects had two foci of attention in the intergroup condition which strained
As noted in the introduction, the variables identified by Ruscher et al. (1991) to account for their findings were controlled in this study. Subjects formed impressions of one constant opponent in interpersonal and intergroup conditions. Yet stereotypic impressions were formed of opponents in interdependent and non-interdependent intergroup conditions. The cognitive resources explanation cannot account for these results. However, self-categorization theory would argue that more stereotypic impressions are formed in intergroup contexts because stereotyping functions to represent the relationship between ingroup and outgroup members.

The finding that interdependence was successfully manipulated in our study but had limited impact on the content of impressions raises some important questions about the dependent variables used to assess impression formation. Attention to stereotype consistent and stereotype inconsistent information has typically been used to assess the type of impressions formed of others. In this study, the actual content of the impression and not gaze duration has been measured and no effects associated with the interdependence manipulation have been found. The link between interdependence, a motivation to allocate more attention to counter-stereotypic information, and individuation may not be as straightforward as the social cognitive theoretical analysis suggests.

It would be useful to further investigate the relationship between attention to information and the actual impression formed.
This is particularly important when attention to inconsistent and consistent information tends to be viewed, in the literature, as synonymous with the formation of individuated and stereotypic impressions, respectively. In effect, the process underlying impression formation and the assumed content of impressions are conflated in this methodology. The amount of time subjects gaze at information does not necessarily tell us much about what subjects are actually doing with the information.

It is clear that inconsistent information can be reinterpreted, ignored or integrated into the impression (see Fiske & Neuberg, 1990; Fyock & Stangor, 1994; Stangor & McMillan, 1992; Yzerbyt et al., 1997). If gaze duration is the dependent measure researchers are not privy to why the information is a focus for attention. Measures regarding impression content are needed in addition to attention measures to reveal the outcome of the impression formation process.

There are also some clear limitations in this study which need to be discussed in the context of future directions for research. The first issue is that there is a potential alternative interpretation for the results obtained across the comparative context conditions of this study. It could be argued that, because outgroup members (opponents who had the opposite problem solving style) were stereotyped and ingroup members (opponents who had the same problem solving style) were individuated, this study has replicated the classic outgroup homogeneity effect.

As outlined in Chapter 3, the outgroup homogeneity effect refers
to more differentiated and heterogeneous impressions being formed of ingroup compared to outgroup members. Typical explanations for the effect are concerned with; a) the level of familiarity with ingroup members or b) how information specific to ingroup members is encoded and retrieved (e.g., Judd & Park, 1988; Linville & Jones, 1980; Park, Judd & Ryan, 1991). Therefore, it is not clear in this study whether variations in the impressions formed across comparative context conditions are due to; a) asymmetry in judgements of ingroup or outgroup members or b) the salient level of abstraction, interpersonal or intergroup.

Haslam et al. (1995a, 1995b), as outlined in Chapter 3, offered an alternative explanation of the outgroup homogeneity effect based on self-categorization theory. They argued that the effect is a product of the fact that the outgroup, but not the ingroup, are typically evaluated in an intergroup context. Haslam et al. (1995b) have shown in a number of studies that when impressions are formed of ingroup and outgroup members in an intergroup context impressions of both are stereotypical and homogeneous. In addition, more heterogeneous impressions of ingroup members have been found, in their studies, under the typical judgement conditions.

Therefore, one way to dissociate the results found in this study from the outgroup homogeneity interpretation would be for an impression of an ingroup member to be formed in both interpersonal and intergroup contexts. It would then be possible to further clarify self-categorization theory predictions regarding variations in the formation of individuated and stereotypic impressions.
Another point to note about the current study is that interdependence has been successfully manipulated but there were no separate indications that attention increased in the interdependent compared to the non-interdependent conditions. For example, subjects did not recall more information overall in the former condition. It needs to be recognised that Fiske and colleagues themselves also had difficulty showing evidence of overall increases in attention using more direct reading time measures (e.g., Ruscher & Fiske, 1990; Ruscher et al., 1991). However, Neuberg and Fiske (1987) presented a detailed mediational analysis in which they argued that it is via a motivation to be accurate that interdependence increases individuation. Therefore, a more direct test of the position that attention impacts on whether individuated or stereotypic impressions are formed of others may be to manipulate accuracy goals directly in the same way as Fiske and Neuberg (1987).

In the next chapter, a second experiment is reported where accuracy goals rather than interdependence are manipulated. In addition, a similar comparative context manipulation is incorporated but impressions of ingroup members are formed in interpersonal and intergroup contexts. The results found in this first experiment also need to be replicated with more subjects in order to confirm their reliability. Overall, though it is possible to conclude that the findings of this first study offer support for self-categorization theory's, rather than the attention model's, predictions regarding variations in impression formation.
7.1 Introduction

In this chapter a study is reported which was designed to build on Experiment 1 where competitive interdependence and comparative context were manipulated. In Experiment 1 the level of abstraction, interpersonal or intergroup, was confounded with whether the target was an ingroup or outgroup member. Subjects were told that their opponent had the same problem solving style as themselves in the interpersonal condition and the opposite problem solving style in intergroup conditions. To fully explore the predictions made by self-categorization theory regarding impression formation it is necessary to design a study where subjects form impressions of an ingroup member in an interpersonal and an intergroup context. It will then be possible to demonstrate whether the content of impressions varies with the level of abstraction rather than simply with in- or outgroup membership.

The experiment reported in this chapter is very similar to Experiment 1 except that the intergroup low salience condition is replaced by an intragroup condition. In this new condition subjects form an impression of a target person who is an ingroup member in an
Importantly, then, in this experiment subjects form an impression of an ingroup member in an interpersonal (interpersonal condition) and intergroup context (intragroup condition), and also form an impression of an outgroup member in an intergroup context (intergroup condition). Based on self-categorization theory it is predicted that because impressions are being formed in group contexts in the intragroup and intergroup conditions stereotypic impressions should be formed of the target person. More individuated impressions should be evident in the interpersonal context, where there is no meaningful contrasting outgroup and within-group comparisons are relevant.

An additional aim of this study is to investigate further the role of motivational factors in impression formation. The relationship between interdependence, an increase in the allocation of cognitive resources and individuation was questioned in Experiment 1. It was noted in the last chapter and in Chapter 4 that Neuberg and Fiske (1987) specifically argued that interdependence impacts on impression formation via increases in accuracy-driven attention. Therefore, it is accuracy-driven attention which is the core feature of the attention model analysis. In the current study accuracy goal instructions were manipulated, using a similar technique as that adopted by Neuberg and Fiske (1987), as a more direct test of the prediction that increases in attention will result in more individuated impressions.

There are also difficulties with using a competitive or cooperative interdependence manipulation in this particular study given the function of the comparative context manipulation. For
example, if competitive interdependence was manipulated it may be difficult for the subject to perceive the target person as an interchangeable ingroup member in the intragroup condition if they are competing with one another for a prize. It is possible that such a manipulation would encourage more interpersonal differentiations and the formation of more individuated rather than stereotypic impressions. Likewise, if cooperative interdependence was manipulated it could be difficult for subjects in the intergroup condition to perceive the target as a member of a different group when they would be required to work together and compete for a team prize. It is likely that subjects would see the target as an ingroup rather than an outgroup member under these conditions. These problems highlight the fact that interdependence affects far more than attention, and that the salience of particular self-other comparisons can be shaped by such manipulations.

Therefore, in order to manipulate interdependence and comparative context successfully in this experiment the type of interdependence would have to vary throughout the design. In the intergroup condition (where subjects would form an impression of an outgroup member) the subject and target would be competitively interdependent. In the intragroup condition (where subjects form an impression of an ingroup member) the subject and target would have to be cooperatively interdependent. Fiske and colleagues make similar predictions regarding interdependence in both cooperative (Erber & Fiske, 1984) and competitive situations (Ruscher & Fiske, 1990), but if the type of interdependence was varied throughout the design other alternative explanations may be difficult to control. It should also be
noted that competitive interdependence has already been manipulated in the previous study.

Given difficulties with the interdependence manipulation and the fact that the interdependence effect is thought to be mediated by accuracy goals, the latter were manipulated in the present study. Neuberg and Fiske (1987) argued that it is "the goal of forming an accurate impression, in conjunction with sufficient attentional resources, that encourages individuating processes" (p. 441; see also Pendry & Macrae, 1994). Just as was the case with interdependence, on the basis of the attentional model it would be predicted that more individuated impressions should be formed in this experiment in the accuracy goal compared to the no accuracy goal condition.

On the basis of self-categorization theory, subjects were expected to form individuated impressions of the target person in the interpersonal conditions and stereotypic impressions in the intragroup and intergroup conditions. Based on the results of Experiment 1 a simple relationship between the accuracy goal and increased individuation was not expected.

7.2 Method
7.2.1 Subjects and design

Subjects were 19 male and 82 female first year psychology students who participated for course credit. Subjects were randomly assigned to one of six conditions in the 2 (attention: accuracy goal/no accuracy goal) x 3 (comparative context: interpersonal, intragroup, intergroup) between-subjects design. Subjects completed the pre-test
and then the main study. Two subjects in the intragroup/no accuracy goal condition were inadvertently given the wrong questionnaire and three subjects did not fully complete the main impression content dependent measure, so their responses were not included in the analysis.

7.2.2 Procedure

The first stage of the study was the same as in Experiment 1, and in the second stage of the study (typically one week after the pre-test) subjects were also given feedback about their problem solving style. In the interpersonal condition it was explained that everyone in the session had the same problem solving style. In the intragroup and intergroup conditions subjects were told that some people in the session had a lateral and others a logical style and that the experimenter was particularly interested in how lateral problem solvers perform in comparison to logical problem solvers. At this point those students with particular code numbers were asked to accompany a second researcher to complete aspects of the study in a separate room. This division into two groups was random but was designed to reinforce the perception that there were logical and lateral problem solvers in the intergroup and intragroup conditions.

Participants were handed a booklet with instructions on the front. Subjects were told that they would be completing similar problem solving tasks to those in part one of the study but this time in the presence of another person described as a team mate in the intragroup condition and opponent in the interpersonal and intergroup conditions.
As in Experiment 1, subjects were also told how their opponent or team mate had been chosen. In the intragroup conditions subjects were told that their team mate would be a member of the same problem solving group to which they belonged. In the intergroup condition the opponent was described as a member of the opposite problem solving group to the one that subjects belonged. In the interpersonal condition, where no contrasting outgroup was made explicit, subjects were informed that their opponent had been chosen randomly from others in the session.

Subjects were directed through the first pages of the booklet where they were given information about their own problem solving style. In contrast to Experiment 1 in this study the target person was described as having a logical problem solving style. Therefore, in order to have subjects in all conditions form an impression of a team mate/opponent with a logical problem solving style, subjects in the interpersonal and intragroup conditions were told they had a logical style. In the intergroup condition the subjects were told they had a lateral problem solving style.

Following Neuberg and Fiske (1987), subjects' impression formation goals were then manipulated. Before reading information about their opponent/team mate, subjects in the no accuracy condition were told:

We would like you to form an impression of your opponent (team mate)
In addition subjects in the accuracy condition read:

It is extremely important that you make every effort to form as accurate an impression as possible. There will be a prize (which will be described later) for those who form the most accurate impression.

Subjects were then asked to read through the information provided about their opponent/team mate. In all conditions the target was described as having a logical problem solving style, and six handwritten statements (the same as used in Experiment 1) were provided. The statements inconsistent with being a logical problem solver were consistent with being a lateral problem solver and vice versa.

In terms of problem solving style the subject and target had the same style in interpersonal and intragroup conditions (both logical) and different problem solving styles in the intergroup condition (subject lateral and opponent logical). As in Experiment 1, all subjects were provided with exactly the same information about the target. Subjects were then asked to work through a series of questions. On completion of these questions subjects were debriefed and all subjects in the accuracy goal condition were given a small prize.

7.2.3 Materials

As in Experiment 1 the materials consisted of two booklets. The first booklet was the same as that used in the previous study and comprised four problem solving tasks. The second booklet incorporated the main manipulations as outlined above and the
dependent measures. After subjects had been given information about their own and their opponent's or team mate's problem solving style they were asked to answer a number of questions.

Initially subjects were asked to complete a Katz-Braly type checklist similar to Experiment 1 but comprising five stereotypic (consistent), five counter-stereotypic (inconsistent) and five neutral words associated with logical problem solving which were derived from earlier piloting. Following the checklist subjects were asked to mark where they would place themselves and their opponent/team mate on two dimensions consistent with lateral problem solving (imaginative and spontaneous) and two consistent with being a logical problem solver (methodical and reasoned). For example, the word "reasoned" was presented next to a line 8.6 centimetres long labelled at one end by "less reasoned" and the other "more reasoned". Subjects had to mark two vertical lines, one which reflected their own position on the dimension (labelled with a S), and another marking the perceived position of their opponent (labelled with an O) or team mate (labelled with a T).

Subjects moved on to complete the following questions where they had to mark a response on a 9-point scale with appropriately labelled ends: 1) How similar do you think you and your opponent (team mate) are to each other? 2) To what extent do you think you and your opponent (team mate) would agree on how to solve problems? 3) How confident are you in the assessment of your problem solving style? 4) How much effort did you put into forming an impression of your opponent (team mate)? 5) How much attention did you pay to the
hand-written descriptive information about your opponent (team mate)? 6) How accurate do you think your impression of your opponent (team mate) is? 7) How difficult do you think it was to form an impression of your opponent (team mate)? 8) How confident are you that you will score higher than your opponent (team mate) on the problem solving tasks?

Subjects were asked to recall as much of the information provided about the target as they could and also to rank the information provided from 1 "most informative" to 6 "least informative" in terms of forming their impression. Two further open-ended questions were included where subjects were asked to describe how they formed their impression of their opponent (team mate) and what they thought was the aim of the study.

7.3 Results

7.3.1 Manipulation check

Subjects were asked how confident they were in the assessment of their problem solving style in order to determine the effect of some subjects being told they had a logical style and others that they had a lateral style. A 2 (accuracy) x 3 (comparative context) between-subjects ANOVA revealed no significant effects. The overall mean confidence was 4.97.

Subjects' self-ratings on the two logical dimensions - reasoned and methodical - and the two lateral dimensions - imaginative and spontaneous - were used to assess identification as logical and lateral problem solvers in the relevant conditions. Self-ratings on each of the
four dimensions were analysed in separate 2 (designated problem solving style) x 2 (accuracy) between subjects ANOVA's. There were significant main effects for designated problem solving style on the dimensions methodical ($F(1, 91) = 19.66, p < .001$) and reasoned ($F(1, 91) = 11.03, p = .001$). Subjects rated themselves higher on these dimensions when they were told they had a logical rather than a lateral problem solving style ($Ms$: methodical = 4.90 and 3.46, respectively; reasoned = 5.89 and 4.83, respectively). On the dimensions imaginative and spontaneous no significant effects were found. Subjects did however, tend to rate themselves higher on these dimensions when they were told they had a lateral rather than a logical problem solving style ($Ms$: spontaneous = 5.27 and 5.01 respectively; imaginative = 5.27 and 5.16, respectively). Subjects allocated a logical problem solving style seem disinclined to characterise themselves as unimaginative and lacking in spontaneity.

7.3.2 Type of impression

The checklist measure was analysed in the same way as in Experiment 1. The relative stereotypicality measure as well as the frequencies for stereotypic, counter-stereotypic and neutral word selection were each analysed using 2 (accuracy) x 3 (comparative context) log-linear analysis. The contrasts were also specified in the same way as in Experiment 1. Frequencies and $z$-scores are summarised in Table 7.1.

On the relative stereotypicality measure there were significant main effects for the contrast comparing interpersonal and the combined intragroup/intergroup (group) condition ($z = 1.95, p = .05$)
and the contrast comparing intragroup and intergroup conditions (z = 3.62, p < .001). Consistent with the findings in Experiment 1 subjects stereotyped more in the group condition than interpersonal condition (t = 36.39 and 21.62, respectively). It was also found that subjects stereotyped more in the intergroup (t = 44.71) compared to intragroup condition (t = 28.07). Analysis of the relative measure also revealed a significant main effect for accuracy (z = 2.04, p < .05), with stereotyping less evident in the accuracy goal compared to the no accuracy goal condition (t = 27.72 and 35.31, respectively).

Table 7.1
Frequencies and z-scores for the relative stereotypicality measure and selection of stereotypic, counter-stereotypic and neutral information.

<table>
<thead>
<tr>
<th></th>
<th>Accuracy goal</th>
<th>No Accuracy goal</th>
<th>Interaction effects</th>
<th>Main effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>25.94</td>
<td>48.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>9.19</td>
<td>17.29</td>
<td>17.29</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>46.96</td>
<td>41.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>3.03*</td>
<td>-4.22*</td>
<td>-2.04+</td>
<td>-1.95</td>
</tr>
<tr>
<td>B</td>
<td>48.04</td>
<td>-2.48*</td>
<td>-.98</td>
<td>-.73</td>
</tr>
<tr>
<td>C</td>
<td>-3.62*</td>
<td>-1.09</td>
<td>2.55*</td>
<td>3.10*</td>
</tr>
<tr>
<td>D</td>
<td>-1.95</td>
<td>.79</td>
<td>1.39</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>-3.62*</td>
<td>.79</td>
<td>-1.16</td>
<td></td>
</tr>
</tbody>
</table>

Note: underlined p < .10 (z-crit = 1.64); + p < .05 (z-crit = 1.96); * p < .01 (z-crit = 2.36); P = interpersonal; I = intragroup; O = intergroup; A = PvI/O; B = IvO; C = accuracy goal v no accuracy goal; D = PvI/O; E = IvO.
Importantly, these main effects on the relative measure were qualified by significant interactions on the contrast between interpersonal and the combined group condition ($z = 3.03, p < .01$) and between the intragroup and intergroup conditions ($z = 4.22, p < .01$). Both interactions are due to findings in the intragroup/accuracy goal condition where subjects selected more non-stereotypic and less stereotypic information to describe impressions (see Figure 7.1).

![Figure 7.1](image)

**Figure 7.1.** Relative frequency of stereotypic versus counter-stereotypic word selection in interpersonal (Personal), intragroup (Intra) and intergroup (Inter) conditions.
Examination of the interaction on the relative stereotypicality measure between the attention conditions and the interpersonal and combined group conditions, revealed that subjects used relatively more stereotypic information when describing impressions in the combined group/no accuracy goal condition (f = 44.17) compared to the other three conditions (fs: group/accuracy goal = 28.62, interpersonal/accuracy goal = 25.94, interpersonal/no accuracy goal = 17.29).

The second interaction between attention conditions and the intragroup and intergroup conditions indicated that in the intragroup/accuracy goal condition (f = 9.69) there was far less use of stereotypic relative to counter-stereotypic traits than in the other three conditions (fs: intragroup/no accuracy goal = 46.96, intergroup/accuracy goal = 48.04, intergroup/no accuracy goal = 41.38). Subjects clearly stereotyped less in the intragroup/accuracy goal than in the intragroup/no accuracy goal condition and the two intergroup conditions.

The pattern of results for the stereotypic, counter-stereotypic and neutral information reflects a similar pattern. For the selection of counter-stereotypic words there was a significant interaction on the intragroup versus intergroup contrast (z = 2.55, p < .01) and a significant main effect for comparative context on the contrast between the interpersonal and combined group condition (z = 3.10, p < .01; see Figure 7.2). Subjects are clearly using more counter-stereotypic information when describing impressions in both the interpersonal conditions (f$s$: accuracy goal = 19.22 and no accuracy goal = 22.10) and the intragroup condition where an accuracy goal was provided (f =
21.44) compared to the other three conditions (fs: intragroup/no accuracy goal = 7.15; intergroup/accuracy goal = 6.73; intergroup/no accuracy goal = 9.80).

![Figure 7.2. Frequency of counter-stereotypic word selection](image)

Figure 7.2. Frequency of counter-stereotypic word selection

For the selection of stereotypic words there was also a significant interaction on the contrast between intragroup and intergroup conditions ($z = -2.48, p < .01$; see Figure 7.3). More stereotypic information was selected when forming impressions in the intragroup/no accuracy goal condition ($f = 54.11$) and the two intergroup conditions (fs: accuracy goal = 54.77 and no accuracy goal = 51.18) than in the intragroup/accuracy goal condition ($f = 30.63$).
As in Experiment 1 a parametric measure was developed to further assess the content of impressions. A stereotyping score for each subject was generated by giving subjects a +1 for each stereotypic word selected as most typical of their impression, a -1 for each non-stereotypic word and a 0 for each neutral word. Scores for the five traits were summed. Each subject could have a score between +5 and -5 with a higher score reflecting more stereotyping.

As in Experiment 1, there was a significant main effect for comparative context ($F(2, 90) = 3.41, p < .05$). Subjects stereotyped more in the intergroup condition ($M = 2.74$) than the intragroup ($M = 1.68$) and interpersonal conditions ($M = 1.30$). This main effect was qualified by a significant interaction ($F(2, 90) = 3.59, p < .05$). For
reasons of interpretability the Newman-Keuls technique was used, unless otherwise stated in this and subsequent cases, to examine differences between means across conditions. Subjects stereotyped less in the two interpersonal conditions (M's: interpersonal/accuracy goal condition = 1.58, interpersonal/no accuracy goal condition = 1.00) and the intragroup/accuracy goal condition (M = .56). Subjects stereotyped more in the intragroup/no accuracy goal condition (M = 2.79) and the two intergroup conditions (M's: intergroup/accuracy goal condition = 2.94, intergroup/no accuracy goal condition = 2.53). The mean in the intragroup/accuracy goal condition was found to be significantly different from all other means. The means in the both interpersonal conditions differed significantly from those in the intragroup/no accuracy goal condition and the two intergroup conditions.

7.3.3 Recall of information

Two measures of recall were developed. Subjects were asked to recall as many of the statements used to describe their team mate/opponent as possible. The total number of statements subjects recalled was analysed. These statements were also coded using a gist criterion and the number which "fitted" the actual information provided were also analysed. These two measures were each analysed using 2 (accuracy) x 3 (comparative context) ANOVAs (see Table 7.2).

There were no differences in recall of the actual statements provided. On the total number of statements recalled there was a significant main effect for comparative context (F(2, 90) = 4.32, p < .05). Subjects recalled more information in the interpersonal condition (M = 4.03) than in the group conditions (M's: 3.16 in the intragroup and
3.17 in the intergroup conditions).

Table 7.2

**Means for recall measures**

<table>
<thead>
<tr>
<th></th>
<th>Accuracy goal</th>
<th>No accuracy goal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pers</td>
<td>Intra</td>
</tr>
<tr>
<td></td>
<td>(N=17)</td>
<td>(N=16)</td>
</tr>
<tr>
<td>Total number</td>
<td>4.00</td>
<td>3.44</td>
</tr>
<tr>
<td>Number correct</td>
<td>2.00</td>
<td>1.63</td>
</tr>
<tr>
<td>Most informative</td>
<td>.29</td>
<td>-.13</td>
</tr>
</tbody>
</table>

Note: Pers = interpersonal, intra = intergroup, inter = intergroup

Subjects were also asked to rank the six statements used to describe the target person from most to least informative. The statement ranked first by each subject was coded in the same way as the checklist and type of recall measure. If a stereotypic statement was ranked as most informative subjects were given a score of +1, a score of -1 was allocated if a non-stereotypic statement was listed and a score of 0 if a neutral statement was ranked first (see Table 7.2). The only significant result was a main effect for comparative context ($F(2, 90) = 5.71, p < .05$). Subjects ranked non-stereotypic statements as more informative in the intragroup ($M = -.10$) and interpersonal ($M = .24$) conditions compared to the intergroup condition ($M = .56$).
7.3.4 Analysis of other measures

(i) Effort in impression formation

Variables designed to assess subjects' effort in impression formation were analysed in a 2 (accuracy) x 3 (comparative context) between-subjects MANOVA (see Table 7.3). Included were the items concerned with the difficulty of impression formation, the level of effort and attention allocated to the process. Unless otherwise stated, the univariate effects were identical to the multivariate effects. No significant multivariate effects were found.

(ii) Similarity to opponent/team mate

Measures of how similar subjects felt they were to their opponent/team mate and the extent to which they felt they would agree with them were also analysed in a 2 (accuracy) x 3 (comparative context) between subjects MANOVA (see Table 7.3). Using Wilks criterion there was a significant multivariate effect for comparative context ($F(4, 178) = 4.05, p < .01$) which was qualified by a significant multivariate interaction ($F(4, 178) = 2.50, p < .05$). Investigation of the univariate tests revealed a main effect for comparative context on both the similarity ($F(2, 90) = 5.67, p < .01$) and agreement ($F(2, 90) = 7.58, p < .05$) measures. Consistent with a shared group membership being more salient in the intragroup condition subjects thought they were most similar to the target in the intragroup ($M = 6.48$) compared to the interpersonal ($M = 5.82$) and intergroup condition ($M = 5.21$). Subjects also thought they would agree with the target more in the intragroup ($M = 6.47$) and interpersonal ($M = 6.00$) conditions than in the intergroup ($M = 5.03$) condition.
There was also a significant univariate interaction ($F(2, 90) = 4.22, p < .05$) on the agreement measure. Examination of the means reveals that the interaction is associated with the interpersonal and intragroup conditions. In order to decompose the interaction protected t-test comparisons were conducted (alpha level set at .01). In the intragroup/accuracy condition the mean on the agreement item does not differ from the interpersonal/accuracy condition ($M$s: 6.06 and 6.65, respectively; $t(31) = 1.11, p > .10$). In the no accuracy goal condition the difference between means in the intragroup condition and interpersonal conditions approaches significance ($M$s: 6.93 and 5.35, respectively; $t(29) = -2.72, p < .02$). In the intragroup conditions the pattern of the means suggests that subjects felt they would agree with their team mate more about how to solve problems in the no accuracy ($M = 6.93$) compared to the accuracy condition ($M = 6.06$), but the difference between these means was not significant ($t(28) = -1.71, p < .10$). Subjects also tended to report higher anticipated agreement with their opponent in the interpersonal/accuracy goal condition ($M = 6.65$) compared to the interpersonal/no accuracy goal condition ($M = 5.35$; $t(32) = 2.23, p < .05$). There was also a consistent pattern of less agreement in the intergroup conditions.

(iii) Confidence in performance

Subjects were asked how confident they were that they would score higher than their opponent/team mate on the problem solving tasks. Responses were analysed in a 2(accuracy) x 3(comparative context between subjects ANOVA (see Table 7.3). No significant effects were found.
Table 7.3

Means for other response scale measures.

<table>
<thead>
<tr>
<th></th>
<th>Accuracy goal</th>
<th>No accuracy goal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P</td>
<td>I</td>
</tr>
<tr>
<td>Similarity to opponent/team mate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Similarity</td>
<td>6.29</td>
<td>6.31</td>
</tr>
<tr>
<td>Agreement</td>
<td>6.65</td>
<td>6.06</td>
</tr>
<tr>
<td>Effort in impression formation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort in impression</td>
<td>5.88</td>
<td>6.44</td>
</tr>
<tr>
<td>Attention to info. opp./team mate</td>
<td>6.47</td>
<td>6.94</td>
</tr>
<tr>
<td>Difficulty in impression formation</td>
<td>5.94</td>
<td>5.63</td>
</tr>
<tr>
<td>Confidence in performance</td>
<td>4.77</td>
<td>4.38</td>
</tr>
<tr>
<td>Perceived accuracy</td>
<td>5.35</td>
<td>6.00</td>
</tr>
</tbody>
</table>

(iv) Accuracy of impressions

Responses to the item measuring the perceived accuracy of the impressions formed was also analysed in a 2 (accuracy) x 3 (comparative context) ANOVA (see Table 7.3). A significant interaction was found ($F(2, 90) = 4.37, p < .02$). Subjects thought their impression was least accurate in the intergroup/accuracy condition and most accurate in the intragroup/accuracy condition.
7.4 Discussion

The results found in the interpersonal and the intergroup conditions of this study clearly replicate those found in Experiment 1. Subjects used more counter-stereotypic information when forming impressions in the interpersonal condition and more stereotype consistent information in the intergroup condition. Also, stereotype consistent information was ranked as more informative in the intergroup condition, whereas, counter-stereotypic information was considered more important in the interpersonal condition. Importantly, in this study there was no evidence that the type of impressions formed in these two conditions was influenced by the accuracy goal manipulation.

In this study there was no systematic increase in individuation where an accuracy goal was provided. However, the accuracy goal in interaction with the comparative context manipulation, did increase individuation (relative to the no accuracy condition) in the intragroup condition. It was found that in the intragroup/no accuracy condition the ingroup target was stereotyped. However, in the intragroup/accuracy goal condition more individuated impressions were formed of the target person. This finding cannot be straightforwardly explained by the attention model. If the accuracy instruction does increase attention to attribute information, in particular inconsistent information, then this instruction should have had an impact in the interpersonal and intergroup conditions as well. In these conditions there should have been more individuation in the accuracy goal versus no accuracy goal conditions. In fact, in the interpersonal and intergroup conditions the results tend to suggest, if anything, that
relatively more stereotypic impressions were formed under accuracy goal conditions.

Evidence of individuation in the intragroup/accuracy goal condition was also counter to predictions based on self-categorization theory. However, it is possible to explain the findings as a product of variations in the salient comparative context. To the extent that the comparative context was interpreted by subjects in intergroup terms it was predicted that they would form more stereotypic impressions in the group conditions. Stereotypic impressions were formed in the intragroup condition where no accuracy instruction was provided, and in the two intergroup conditions. It is possible that the contrasting outgroup and associated intergroup comparisons were not salient when subjects formed impressions of their team mate in the intragroup/accuracy goal condition.

The fact that subjects in intragroup conditions were in a room with only other ingroup members, and the accuracy goal emphasised forming an impression of one of these members, could have made interpersonal rather than intergroup comparisons more relevant for subjects. Thus, the accuracy instruction in interaction, with a weakly manipulated intergroup context could have shifted the salient comparative context such that interpersonal, within-group comparisons were more relevant (see also Reicher, Hopkins & Condor, 1997).

In fact results on the agreement measure offer some support for the argument that intergroup comparisons were not salient in the
intragroup/accuracy goal condition. It would be predicted, from self-categorization theory, that the salience of intergroup comparisons would be indicated by higher perceived agreement with an ingroup member about problem solving. It was found that subjects tended to think they would agree with their team mate more about problem-solving in the intragroup/ no accuracy goal compared to the intragroup/ accuracy goal condition which suggests that interpersonal comparisons may have been salient in the latter condition.

Shifts in the salient comparative context can also explain why, on some measures, there was more individuation in the intragroup/accuracy goal condition. Subjects were told that they had the same problem solving style as the target in the interpersonal and intragroup conditions. However, in the intragroup conditions the target was described as a team mate and in the interpersonal conditions the target was described as an opponent. Therefore, in the intragroup conditions the subject and target are explicitly described as members of the same group. If the accuracy goal in interaction with a weak intergroup manipulation contributed to a shift in the comparative context from intergroup to interpersonal levels, then the fact that a higher order ingroup was more explicitly defined may have led to further interpersonal differentiation.

In self-categorization theory it is argued that the basis of individuation is formation of a "(personal) self-categorization which contrasts the person with ingroup members" (Oakes et al., 1994, p. 190). Given that an ingroup was more defined in the intragroup compared to the interpersonal conditions subjects could have
contrasted themselves from the target more if interpersonal comparisons were contextually relevant. Stereotype inconsistent information may enable subjects to differentiate themselves from the target. Therefore the use of more counter-stereotypic information in the intragroup/accuracy goal condition could be explained in terms of this differentiation process. In summary then, a possible explanation for individuation in the intragroup/accuracy goal condition is that the accuracy goal instruction in interaction with a weak manipulation of the intergroup context, may have influenced subjects to accentuate the differences rather than the similarities between themselves and the target.

There are also some additional results which need to be considered. It is important to emphasise that the results regarding comparative context in this second experiment cannot be explained through the potential outgroup homogeneity explanation which clouded the interpretation of the results in Experiment 1. The results of this second experiment indicate that ingroup members can be individuated or stereotyped depending on salient features of the comparative context (see Haslam et al., 1995a, 1995b).

It is also interesting to note that in the intragroup conditions subjects ranked inconsistent information as more informative in impression formation in both the intragroup/accuracy goal condition and intragroup/no accuracy goal condition. However, in the former condition the target was individuated and in the latter more stereotypic impression were formed of the same target. These results further support the conclusions drawn in Experiment 1 that there are
problems with using typical attention measures to assess what the perceivers are actually doing with the information in order to form an integrated impression. It is possible that subjects reconciled the counter-stereotypic information to form more stereotypic impressions in the intragroup/no accuracy goal condition (e.g., Yzerbyt et al., 1997). As outlined in the previous chapter the relationship between time spent looking at information, the recall of information, the importance of particular types of information in impression formation and the actual content of the impression needs to be explored in more detail.

Direct manipulations of cognitive capacity, as used in the cognitive load literature summarised in Chapter 4, and comparative context variables may provide another direction for future research. However, as outlined in Chapter 4 some preliminary studies by Nolan et al. (1996) have investigated the impact of such variables on the level of stereotyping. Their results clearly supported the predictions, based on self-categorization theory, that stereotyping decreased when cognitive load increased because subjects could not meaningfully interpret the information in group-based terms.

In summary then, predictions based on self-categorization theory are generally supported by the findings in this study. The main results of Experiment 1 have been replicated. There is no evidence that the accuracy goal systematically increased individuation relative to the no accuracy goal condition. There is also evidence that ingroup members can be individuated or stereotyped depending on whether interpersonal or intergroup comparisons are contextually relevant. These results offer support for the position that variations in
impression formation are mediated by the comparative context and the salient level of abstraction at which the impression formation process operates.

7.5 General discussion of experiments 1 and 2.

In the last two experiments there has been no systematic indication that motivational factors, such as interdependence and accuracy goals, influence the impressions formed of a specific target. The results generally supported self-categorization theory predictions where variations in impression formation corresponded with whether an interpersonal or intergroup context was salient. The most pressing question is why were the effects found in previous research regarding interdependence and accuracy goals not replicated in these two experiments. Although speculative there are two potential explanations which may be worth considering.

First, it is possible that, as found in previous studies by Fiske and colleagues, subjects in experiments 1 and 2 did look at inconsistent information longer in the accuracy goal and interdependence conditions (e.g., Ruscher & Fiske, 1990; Ruscher et al., 1991). However, if this is the case then gaze duration is not at all correlated with the content of impressions because there was no evidence of generally increased individuation in the interdependent and accuracy goal conditions in our studies.

Secondly, it is possible that in previous experiments the effects obtained in the interdependence and accuracy goal conditions (e.g., looking at inconsistent information longer, making more dispositional
Comments) have been due to implicit variations in the comparative context. That is, interdependence manipulations and accuracy goal manipulations may shape the comparative context in specific ways so that intergroup or interpersonal comparisons become more relevant to subjects.

In fact, the results of studies such as those by Neuberg and Fiske (1987) and Ruscher et al. (1991) described in Chapter 4, can be interpreted in terms of possible variations in the salient comparative context. In Neuberg and Fiske's (1987) study the results suggested that subjects formed a stereotypic impression of Frank (a schizophrenic patient) when the subject and patient were not outcome dependent and the information provided was neutral with respect to the schizophrenic category. In this non-interdependent condition, subjects were told that their performance would be compared with that of other subjects and that Frank's performance would be compared with that of other schizophrenic patients. This instruction itself could reinforce the stereotype that schizophrenic patients are different and that their performance on the task needs to be assessed in terms of a special standard - that of other schizophrenic patients. It is possible that subjects formed relatively stereotypic impression of Frank in this condition because the manipulation of low interdependence actually defined the self-target relationship in more intergroup terms.

The instructions in the outcome dependent condition in Neuberg and Fiske's (1987; see also Erber & Fiske, 1984) study could also affect the salience of interpersonal or intergroup comparisons. Generally, in outcome dependent conditions the subject and patient are
cooperatively interdependent and have to work together. A prize is awarded based on their combined efforts. The instructions could encourage subjects to see themselves and the person they are forming an impression of as sharing the same ingroup membership and therefore more within-group, interpersonal comparisons would be predicted from the self-categorization theory perspective. The level of abstraction at which impressions of others are formed could be affected by cooperative outcome dependent manipulations.

In the Ruscher et al. (1991) study the confound between cooperative interdependence and forming an impression of an ingroup member was overcome through use of competitive interdependence. In competitive interdependent conditions it was found that stereotype-inconsistent information was looked at for longer than stereotype-consistent information when forming an impression of a team mate and the reverse was found when impressions of opponents were formed. It is possible that judgements of team mates may represent interpersonal differentiations within an ingroup and therefore the focus is on characteristics which differentiate group members - inconsistent information. On the other hand, judgements of opponents could have been made on an ingroup-outgroup basis, and subjects focused on characteristics which differentiated between the ingroup and the outgroup - consistent information. This interpretation assumes that judgements of team mates, as found in Experiment 2, were made in a relatively interpersonal rather than intergroup context.

The manipulation of interdependence in both Neuberg and Fiske's (1987) and Ruscher et al.'s (1991) studies may have changed
the basis of comparison between the perceiver and the perceived and actually framed the comparative context at particular levels of abstraction. As the comparative context has been explicitly manipulated in the two experiments reported in this thesis any such implicit effects may have been subsumed. The outcome is clear effects in both studies for comparative context and no systematic evidence that motivation factors lead to the formation of more individuated impressions.

In summary then, the following conclusions can be drawn from the results of experiments 1 and 2: 1) using the content of impressions as the main dependent measure, interpersonal contexts produce more individuation and intergroup contexts produce more stereotyping; 2) there is no evidence that motivation and attention, as manipulated by Fiske and colleagues, is systematically influencing the resultant impression.

These findings have implications for our understanding of the impression formation process. The results further reinforce the view that individuated impressions may not be formed through a distinct resource consuming categorization-free process and warrant a more detailed examination of the relationship between categorization and individuation. It is this issue which is addressed in the remaining two experiments reported in this thesis.
8.1 Introduction

Experiments 1 and 2 have focused on the first empirical aim of this thesis - specification of the conditions under which more stereotypic or individuated impressions are formed. It has been shown that variations in the salient comparative context affect the content of impressions. Impressions did not vary systematically with the attention-related manipulations of interdependence and accuracy goals. The second empirical aim of the thesis, outlined in chapters 1 and 5, is to investigate the actual process underlying impression formation. The emphasis in the next two experiments therefore shifts from direct interest in factors which influence the type of impressions formed of others to a related but perhaps more fundamental issue, an examination of process.

Although in the previous two studies targets have been individuated and stereotyped broadly in line with self-categorization theory predictions, the impression formation process responsible for these different kinds of impressions has not been transparent. It has not been demonstrated that the formation of individuated and stereotypic impressions is based on the same categorization process,
but operating at different levels of abstraction.

If categorization is the basis of individuated impression formation then this has significant and fundamental consequences for the social cognitive perspective on stereotyping. The whole argument that stereotyping is a distorted form of perception because it is an outcome of categorization would be challenged by evidence that individuated impressions are also based on categorization and accentuation.

As became clear in chapters 4 and 5, social cognition and self-categorization theory offer fundamentally different interpretations of the categorization process. A core issue which differentiates between these two approaches to social perception is the role of accentuation. As detailed in Chapter 4, and throughout experiments 1 and 2, variables such as outcome dependence and accuracy goals are interpreted as affecting whether subjects increase their "accuracy-driven attention to attribute information" and evaluate targets "with respect to their actual characteristics" (Neuberg & Fiske, 1987, p. 442, emphasis added, see also Judd & Park, 1993). Attribute information and idiosyncratic characteristics are seen to represent a particular person in an absolute, stimulus-based way. Categorization and accentuation distort perception away from these more accurate representations of others.

Alternatively, as outlined in Chapter 5, in self-categorization theory it is argued that categorization and accentuation reflect "real variations in the relational properties of people" (Oakes et al., 1994, p.
196) and are the basis of meaningful inference. Shifts in the level of perception and associated accentuation of similarities and differences, from interpersonal-to-intergroup and from intergroup-to-interpersonal, are not seen to reflect distortion of any kind. Rather such shifts are argued to meaningfully reflect the "rational selectivity of perceptions in which it is more appropriate to categorize at one level in some contexts and at a different level in others" (Oakes et al., 1994, p. 196). Changes in the level of categorization should, therefore, be evidenced by variations in the patterns of accentuation. Accentuation of intragroup similarities and intergroup differences in intergroup contexts should be replaced by accentuation of intrapersonal similarities and interpersonal differences where interpersonal comparisons are relevant (Oakes et al., 1994; Turner et al., 1994; Turner & Oakes, 1997).

Similarity measures, homogeneity in responses, and "who said what" measures, as detailed in Chapter 5, have been used extensively to show that categorization of stimuli leads to the accentuation of within category similarities and between category differences (see Wilder, 1986, for a review). Accentuation has been characterised throughout this research as mainly an intergroup phenomenon (see also Brewer & Weber, 1994; Simon et al., 1995). There has been limited investigation of patterns of accentuation where the formation of individuated impressions are concerned (cf. Sedikides & Skowronski, 1993). Typically, interpersonal conditions are included in experiments as "base-line" conditions, in contrast to which the accentuation of similarities and differences at the group-level is defined.
A typical example of research on accentuation effects is represented in a study by Wilder (1984). Subjects were allocated to groups supposedly on the basis of their preferences for a particular artist (see Tajfel et al., 1971). Subjects had to estimate a range of opinions held by other ingroup or outgroup members. These estimations were either made under conditions where all subjects in a session were described as members of the same group (intragroup) or where ingroup and outgroup members were explicitly defined in the experimental session (intergroup). In intergroup conditions subjects had to either estimate the opinions of ingroup or outgroup members. Comparisons between the intragroup and intergroup-ingroup condition were used to assess the accentuation of similarity to self and perceived homogeneity.

Wilder (1984) found that on the similarity measure, where subjects had to rate how similar they were to an ingroup or outgroup member on a 1 to 9 scale, the mean in the intragroup condition fell in between the means in the two intergroup conditions. Subjects rated themselves as being most different from outgroup members and more similar to ingroup members in the intergroup-ingroup than intragroup condition. It was argued that the presence of the outgroup enhanced perceived similarity. Responses were also found to be more homogeneous in the intergroup conditions.

Wilder (1984), based on the work of Tajfel and Turner (1979), suggested that in the intragroup conditions attention would be focused "on the differences between individuals" (1984, p. 323). The accentuation of these differences was not specifically examined. In
fact, interpersonal differentiation has generally not been a main focus for research. It is not clear whether differences are accentuated indiscriminately or in a dimension specific way. In order to explain the impression formation process it is necessary not to take the "base-line" analysis for granted and to look at self-other accentuation in interpersonal contexts as a subject of interest in its own right.

For this reason a study was designed to assess the specific pattern of accentuation between the same constant targets at both intergroup and interpersonal levels. If the pattern of accentuation is consistent with self-categorization theory predictions this may provide some preliminary evidence that categorization underlies impression formation in both intergroup and interpersonal contexts.

In this study, three groups of subjects viewed the same video of a discussion between six people about their attitudes to success. The only information which varied across the three conditions was background information about who developed the video. Subjects were informed that participants in the discussion were arts and engineering students and that the video was made by (a) the Engineering students' association to examine the effect of faculty of enrolment on success; (b) a women's group on campus to examine the effect of gender on success or (c) the Centre for Educational Development and Management (CEDAM), which was described as an organisation interested in tailoring education more on an individual basis, to examine the effect of individuals' views on success. After watching the video subjects were asked to form an impression of two participants - target 1 and target 2. Both targets were female and each target made two
statements. One statement was stereotypic of being female and the other statement was stereotypic of being an arts student for target 1 and an engineering student for target 2.

The background information provided about who developed the video was predicted to subtly influence how the targets would be categorized. It has been shown by Medin and colleagues in their rule induction studies (see Chapter 5) that the same stimulus (e.g., pictures) can be interpreted in divergent ways depending on the background information available (e.g., information about who drew a series of pictures). Their results indicated that the meaning of the stimulus information changed in order to support the categorization rules that developed. In relation to self-categorization theory, Medin and colleagues' results could be explained in terms of the fact that changes in background theories actually change the comparative and normative features of the stimuli - the meaning of the stimuli and which similarities and differences are accentuated (see Brown & Turner, 1996; Oakes, 1983, 1987).

In the current study the pattern of accentuation between the same two constant targets was, therefore, predicted to vary depending on the background information provided and how the targets were categorized. When the background information was ostensibly that the video was developed by a women's group on campus it was predicted that the targets would be seen as members of the same group "women" and perceived as similar to one another (intragroup condition; note that in this study intragroup refers to judgement of an ingroup member in an intergroup context). It was predicted that the same two
targets would be seen as different from one another, as members of distinct groups, "arts students" and "engineering students", where the video was supposedly produced by the Engineering students' association (intergroup condition). In the condition where CEDAM supposedly produced the video it was anticipated that the interpersonal differences between the targets would be accentuated (interpersonal condition).

In the intergroup and interpersonal conditions the same prediction is made that the differences between the targets should be accentuated. However, because the level of abstraction at which impression formation occurs is anticipated to vary in these two conditions (intergroup and interpersonal), the dimensions on which similarities and differences are accentuated should be different in the two conditions.

8.2 Method
8.2.1 Subjects and design

Subjects were 26 female and 16 male first year psychology students who participated in the study for course credit. Subjects watched a video depicting a discussion between students about their attitudes to success. Background information about who developed the video were varied so that the anticipated categorization of the targets would be as; (a) members of the same group; (b) members of different groups; or (c) differentiated individuals. Therefore, the design of the study had one factor (anticipated categorization of targets) with three levels: intragroup, intergroup and interpersonal. Three subjects (two females and one male) stated on a manipulation check that they knew
students on the video so their responses were not included in analyses. Assignment to conditions was random.

8.2.2 Procedure

Sessions were run with between 1 to 11 subjects by a female researcher. Subjects were asked not to communicate with one another throughout the study, informed that the study concerned attitudes to success, and told that they would be viewing a video and then marking responses on a questionnaire. Subjects were informed they could withdraw from the study at any time and that their responses were entirely private and confidential. The researcher distributed the questionnaires and read through the front of the booklet.

The front of the booklet contained a brief passage explaining that University administration was concerned about uneven perceptions of success across students in different areas of the university. This was followed by information about the purpose of the video. For example in the intergroup condition the subjects were informed that:

The Engineering Students’ Association explored the issue of attitudes to success.

They brought students together from different areas of the university, in this case Arts and Engineering students, to discuss and examine the influence of faculty of enrolment on success.

You are going to watch a segment of this discussion which was videoed by the Engineering Students’ Association and then answer some questions about your impressions of those depicted and their attitudes to success.
The underlined aspects of the above passage varied across conditions (they were not underlined on the booklet). In the intragroup condition the words "Women's group on campus" replaced "Engineering Students' Association" and instead of "faculty of enrolment on success" the words "gender on success" were substituted. Likewise in the interpersonal condition the words "CEDAM" and "individuals' views on success" were inserted, respectively. In the interpersonal condition an explanation of CEDAM was also provided which stressed that CEDAM was interested in tailoring education more on an individual to individual basis. Note that all subjects were told that the students were from Arts and Engineering, so in all conditions the information about applicable category memberships was constant. Subjects then watched a video where six students, 3 males and 3 females, discussed their attitudes to success. After viewing the video subjects were asked to answer a series of questions and were then debriefed.

8.2.3 Materials

The materials consisted of the video and the dependent measures questionnaire. For the video three female and three males discussed attitudes to success by following a carefully constructed script. The script was organised around statements which were pre-tested as being either stereotypical of arts and engineering students or males and females. For the video the participants in the discussion were positioned so that sex of the discussants alternated from female to male around a semi-circle. Each of the six discussants made two comments on the video in what was designed to be an interconnected conversation. Table 8.1 describes the type of statement made by each
of the participants in the discussion.

Table 8.1
The type of statement made by each participant and the order of the contribution

<table>
<thead>
<tr>
<th>Participant</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>T2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of participant</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
</tr>
<tr>
<td>Contribution 1</td>
<td>AS</td>
<td>AS</td>
<td>AS</td>
<td>ES</td>
<td>ES</td>
<td>ES</td>
</tr>
<tr>
<td>Contribution 2</td>
<td>FS</td>
<td>MS</td>
<td>FS</td>
<td>MS</td>
<td>FS</td>
<td>MS</td>
</tr>
</tbody>
</table>

Note: T1 = Target 1; T2 = Target 2; F = Female; M = Male; FS = female stereotypical, MS = male stereotypical; AS = arts stereotypical, ES = Engineering stereotypical.

After watching the video subjects were asked to mainly answer questions about two of the female discussants described as target 1 and target 2. Target 1 and two other discussants (one male and one female) each made one statement stereotypic of an arts student's attitude to success (e.g., "I find that I understand things best when using my imagination and this is important because it leads to new and innovative ideas"). Target 2 and the two remaining male discussants each made a statement stereotypic of an engineering student's attitude to success (e.g., "I think it is your attitude to work
and being methodical and structured in the way you approach it. The amount of effort you put into something will determine your success more than any other factor”.

The second statement made by each participant was stereotypic of their sex. Both target 1, target 2 and the other female discussant each made one statement stereotypic of a woman's attitude to success (e.g., "Your ability to communicate your ideas is essential. You always need to listen to what others have to say and have an open-mind and this allows you to form your own opinions"), while the three male discussants made statements stereotypic of a male's attitude to success (e.g., "to succeed you have to be able to be assertive and not worry too much about what others think").

After watching the video subjects were asked to work through questions in the booklet. On the first page of the booklet, a photograph taken from the video was presented with two of the female discussants marked as target 1 and target 2. Subjects were asked to form an impression of these targets. On the following page nine questions which concerned target 1 and target 2 were asked. The questions focused on how similar target 1 and target 2 were to each other, to what extent they agreed in the video and in general, and how similar they were in terms of their attitude to success. Also, how successful each would be, the extent to which they would have things in common, would like each other and get along. Subjects had to respond to each question by circling a number from 1 to 9 on scales with appropriately labelled ends.
On the next page subjects assessed the extent to which a number of traits (e.g., practical, communicative) characterised both target 1 and target 2. Nine traits were presented, each accompanied by a line 8.6 centimetres long labelled at one end "not at all" and at the other "very much". Two of the traits were pre-tested as being stereotypic of engineering students (practical and methodical), two were stereotypic of being an arts student (imaginative, creative), two were stereotypic of women (communicative and sensitive) and two were considered to be more individual characteristics (warm and friendly). Subjects also rated the targets on the dimension successful so the aim of looking at attitudes to success would seem legitimate. Subjects were asked to judge the extent to which the particular dimension characterised target 1 and target 2 by marking a vertical line to represent each of their positions on that dimension.

The final page of the booklet provided space for subjects to write a brief description of their impression of target 1 and target 2. On this page there were also a number of additional questions, where subjects had to mark a response on a 9-point scale with appropriately labelled end points. Items assessed; 1) how confident subjects were in their responses; 2) how difficult they found the tasks; and 3) how interested they were in the experiment. In addition subjects had to indicate who they thought developed the video and whether anyone on the video was familiar to them.

8.3 Results

8.3.1 Judgements of targets based on response scale measures

The first question (the main dependent measure) assessed the
perceived similarity between target 1 and target 2. Results were analysed using a one-way ANOVA (see Table 8.2). In line with predictions, the extent to which the targets were seen to be similar to one another varied across conditions ($F(2,36) = 4.57, p < .05$).

Table 8.2
Means on measures to assess the relationship between target 1 and target 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>Inter</th>
<th>Intra</th>
<th>Pers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar to each other</td>
<td>4.31a</td>
<td>6.23b</td>
<td>5.08c</td>
</tr>
<tr>
<td>Agreed on video</td>
<td>5.38b</td>
<td>6.77a</td>
<td>5.15b</td>
</tr>
<tr>
<td>Agree in general</td>
<td>5.00</td>
<td>5.62</td>
<td>5.23</td>
</tr>
<tr>
<td>Similar attitudes to success</td>
<td>5.46b</td>
<td>6.62a</td>
<td>5.23b</td>
</tr>
<tr>
<td>Like one another</td>
<td>4.54b</td>
<td>5.69a</td>
<td>4.69b</td>
</tr>
<tr>
<td>Have things in common</td>
<td>4.69</td>
<td>5.69</td>
<td>5.08</td>
</tr>
<tr>
<td>Would get along</td>
<td>4.92</td>
<td>5.69</td>
<td>5.08</td>
</tr>
</tbody>
</table>

Note: Inter = intergroup, Intra = intragroup, Pers = interpersonal; means with different subscripts differ at $p < .05$.

As can be seen from Table 8.2, the targets were judged to be most similar in the intragroup condition ($M = 6.23$) and least similar in the intergroup condition ($M = 4.31$). The targets were also rated as
relatively different from one another in the interpersonal condition (M = 5.08). The pattern of these differences was assessed using Newman-Keuls and all three means were found to differ significantly from each other at the .05 level.

Other variables reported in Table 8.2 were included to assess more generally the relationship between target 1 and target 2. These variables were analysed in a oneway MANOVA. No significant multivariate effects were found. On three items univariate effects were significant. They were: agreement on the video (F(2, 36) = 6.26, p < .01), similar attitudes to success (F(2, 36) = 3.45, p < .05) and the extent to which the targets would like one another (F(2, 36) = 4.10, p < .03). In all cases the targets were seen as more similar in the intragroup condition than the other two conditions. The means in the intergroup and interpersonal conditions did not differ from each other. Subjects were also asked how successful they thought target 1 and target 2 would be respectively. Each item was analysed in a oneway ANOVA. No significant differences were found across conditions.

Generally, perceived similarity and difference between the targets is varying in relation to contextual factors. Exactly the same targets are seen as different when faculty of enrolment or individual interest is the basis of comparison, and similar when being female becomes the salient feature for comparison. However, it is important to show that comparing across the intergroup and interpersonal conditions the way in which the targets are differentiated from each other varies depending on the level of abstraction of the impression formation process.
8.3.2 Target ratings on specific trait dimensions

It was predicted that the targets would be judged differently on trait dimensions across conditions. The ratings of target 1 and target 2 on each of the nine trait dimensions (e.g., warm, friendly, communicative, methodical) were each analysed using a 2 (target rated) x 3 (anticipated categorization of targets) ANOVA with repeated measures on the first factor. The means are reported in Table 8.3.

Table 8.3
Mean scores for target 1 and target 2 on trait measures

<table>
<thead>
<tr>
<th>Trait dimensions</th>
<th>Target 1</th>
<th>Target 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter</td>
<td>Intra</td>
<td>Pers</td>
</tr>
<tr>
<td>Warm</td>
<td>4.72</td>
<td>4.09</td>
</tr>
<tr>
<td>Communicative</td>
<td>5.49</td>
<td>6.34</td>
</tr>
<tr>
<td>Friendly</td>
<td>5.14</td>
<td>4.67</td>
</tr>
<tr>
<td>Sensitive</td>
<td>4.73</td>
<td>4.12</td>
</tr>
<tr>
<td>Creative</td>
<td>6.29</td>
<td>6.04</td>
</tr>
<tr>
<td>Methodical</td>
<td>4.46</td>
<td>5.13</td>
</tr>
<tr>
<td>Successful</td>
<td>5.27</td>
<td>6.28</td>
</tr>
<tr>
<td>Imaginative</td>
<td>6.19</td>
<td>5.54</td>
</tr>
<tr>
<td>Practical</td>
<td>3.77</td>
<td>4.44</td>
</tr>
</tbody>
</table>

Note: Inter = intergroup, Intra = intragroup, Pers = interpersonal
There were significant main effects for target rated on the dimensions creative, imaginative, practical and methodical. Target 1 was seen as more creative ($M_s$: target 1 (T1) = 6.11, target 2 (T2) = 5.30; $F(1, 38) = 7.43, p < .01$) and imaginative ($M_s$: T1 = 5.87, T2 = 5.00; $F(1, 38) = 7.90, p < .01$). Target 2 was seen as more practical ($M_s$: T1 = 4.14, T2 = 5.38; $F(1,38) = 11.67, p < .01$) and methodical ($M_s$: T1 = 4.88, T2 = 5.84; $F(1, 38) = 6.73, p < .02$). Generally, target 1 is being rated higher on arts dimensions and target 2 on engineering dimensions.

In order to further investigate relative judgements of similarities and differences on the various dimensions, the absolute difference between the rating of target 1 and the rating of target 2 was calculated. These scores were then averaged across dimensions pre-tested as being consistent with studying engineering (practical, methodical) and arts subjects (imaginative and creative), being female (communicative and sensitive) or more individual characteristics (warm, friendly and successful). These three measures were analysed using a 3 (anticipated categorization of targets) x 3 (dimension) ANOVA with repeated measures on the last factor. The interaction approached significance ($F(4, 72) = 2.23, p = .07$). The means are reported in Table 8.4 (see also Figure 8.1), where a higher score reflects greater perceived differences between target 1 and target 2. As can be seen from the table, the pattern of accentuation of similarities and differences between the targets on the various dimensions differs depending on background theories and the way the targets were categorized.
Table 8.4

Mean differences scores between target 1 and target 2 on combined dimensions.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Female</th>
<th>Eng/Arts</th>
<th>Individual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated categorization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intragroup</td>
<td>1.52</td>
<td>1.50</td>
<td>1.89</td>
</tr>
<tr>
<td>Intergroup</td>
<td>2.37a</td>
<td>2.15a</td>
<td>1.67b</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>1.72c</td>
<td>2.15d</td>
<td>1.45c</td>
</tr>
</tbody>
</table>

Note: Means with different subscripts differ at the .05 level based on Newman-Keuls analysis.

The differences between the means were assessed using Newman-Keuls analysis. The comparisons of particular interest are between the intergroup and interpersonal conditions, in both, as seen on the main similarity measure, target 1 and target 2 are differentiated from each other. In the intergroup condition the targets are seen as more different on the engineer/arts dimensions and the female dimensions ($M_s = 2.15$ and $2.37$, respectively) than on the individual dimensions ($M = 1.67$). In comparison, in interpersonal conditions the targets are again seen as different on the engineer/arts dimensions ($M = 2.15$) but as more similar to one another on the female ($M = 1.72$) and individual dimensions ($M = 1.45$). There were no
differences between the means on the individual dimensions across conditions. The key point is that as predicted, the results suggest that the pattern of perceived similarity and difference between the targets is not the same in the intergroup and interpersonal conditions.

Note: Higher scores reflect greater perceived differences between target 1 and target 2.

**Figure 8.1.** Mean difference scores between target 1 and target 2 on combined dimensions.
8.3.3 Analysis of other measures

The responses to the items assessing confidence in responses, interest in the study and perceived difficulty, were each analysed using between-subjects one-way ANOVA's. There were no significant differences found across the categorization of targets conditions ($F(2, 36) = 1.19, p > .10$; $F(2, 36) = 1.60, p > .10$; and $F(2, 36) = .09, p > .10$, for each question respectively).

8.4 Discussion

The main aim of the study was to investigate the pattern of accentuation between the same two targets in interpersonal, intragroup and intergroup conditions. It was predicted that depending on the background information provided, targets would be categorized as members of either the same or different groups and that the similarities or differences between them would be accentuated, respectively. However, because specific patterns of differentiation have not typically been investigated when individuated impressions are formed, results in the interpersonal condition were of particular interest. In conditions where the targets were perceived as members of distinct groups or as unique individuals it was predicted that the differences between targets would be accentuated. Importantly, though, it was anticipated that the dimensions on which similarities and differences would be accentuated would differ given variations in the inclusiveness of categorization.

One of the main dependent measures was the initial question regarding similarity, where subjects had to indicate on a 1 to 9 scale how similar target 1 and target 2 were to each other. Subjects
perceived the targets to be most similar in the intragroup condition and least similar in the intergroup condition. The mean in the interpersonal condition fell in between the means in the other two conditions. The results on the similarity measure indicate that the pattern of accentuation was unique in each condition. In particular, it was found that the means in the intergroup and interpersonal conditions differed significantly from one another suggesting a different basis of differentiation in these two conditions.

These results are similar to those obtained by Wilder (1984) and suggest that intergroup, intragroup and interpersonal conditions were successfully manipulated in the current study using more subtle comparative context manipulations (see also Simon & Brown, 1987; Simon & Pettigrew, 1990). Consistent with self-categorization theory predictions, categorization of the targets seems to be a product of the interaction between background information and the stimulus information provided. The results indicate that information about who produced the video influenced the meaning of the available information and how relevant similarities and differences were accentuated.

The results on the similarity measure are, however, amenable to an alternative interpretation. Consistent with the view that group-based perceptions are distorted relative to individuated impressions, the results in the interpersonal condition could be seen as a reflection of some true, accurate base-line relative to which accentuation in the other two conditions can be defined. The other findings could then be taken as evidence of accentuated similarity between the targets in the
intragroup condition, and accentuated difference between the targets in the intergroup condition.

Importantly, the way in which the targets were represented relative to one another on the combined trait dimensions cannot be explained by this base-line accuracy analysis. On female dimensions, the targets were perceived as similar to one another in intragroup and interpersonal conditions but as more different to one another in the intergroup condition. On arts/engineer dimensions the targets were seen as different in the intergroup and interpersonal condition but more similar in the intragroup condition. The pattern of results in the interpersonal condition does not provide a base-line from which the similarities or differences between the two targets could be accentuated in the intergroup conditions. Is it the perceived difference on arts/engineer dimensions or similarity on female dimensions in the interpersonal condition, that provides the accurate basis for accentuation in the intergroup conditions?

In many respects, though, it appears that the results on the dimension measures are not what would be predicted based on self-categorization theory. The targets are not seen as more similar in the intergroup conditions on dimensions related to the categorization of the targets. For example, targets in the intragroup condition were not seen as more similar on the female than the arts/engineer dimensions even though it appears they were categorized as women in this condition. In the intergroup condition targets were not seen as more different on arts/engineer dimensions than other dimensions. There were also no differences found on the individual dimensions across
conditions.

The results on the dimension measures were not consistent with predictions. Most importantly, it is not obvious how the ratings on the dimensions relate to the categorization of the targets. This is particularly true in the interpersonal condition where because a shared intragroup context was not specified there was no benchmark from which to assess the pattern of accentuation. Clearly, the specific nature of the dimensions needs to be further developed and piloted in future work. Other content measures could also be incorporated to further examine in what way the targets are being stereotyped or individuated and therefore, aid the interpretation of results.

While recognising the problems and limitations associated with the dimension measures there are some particular results which are worthy of comment. First, the pattern of accentuation is different in all three conditions which reflects the impact of the background information provided and associated categorization of the targets. Second, the results suggest that the way similarities and differences are accentuated in the interpersonal condition are not indiscriminate. On some dimensions in the interpersonal condition the targets are seen as similar (female and individual dimensions), and on others they are seen as different (arts/engineer dimensions). The findings do suggest that differentiation only occurs on specific dimensions but it is not clear how these dimensions relate to the categorization of the targets.

Clearly a superordinate category needs to be defined explicitly in
the interpersonal condition so that the specific pattern of within-group differentiation can be evaluated. It would then be possible to assess the type of dimensions, for example those consistent or inconsistent with the defining ingroup, on which differentiation occurs. However, the possible alternative "base-line" interpretation for the pattern of results found in this study suggests that even if the measures were refined, evidence of specific differentiation between people on particular dimensions may not be very persuasive. Such interpersonal differentiation, although consistent with self-categorization theory predictions, could be interpreted, by those who argue for the primacy of individuated perception, as reflecting the supposed accuracy inherent in individuation.

The results of this study have reinforced the idea that in order to show that individuated impression formation is also based on a context-dependent categorization process, it is necessary to demonstrate that the same constant target can be individuated in different ways depending on contextual factors. Evidence is needed that individuated impressions are as much based on relative self-other interpersonal judgements as stereotypic impressions are based on relative intergroup comparisons. It is therefore, necessary to investigate relative changes in interpersonal differentiation under conditions where the defining ingroup is manipulated. These are the challenges for the fourth and final study reported in the next chapter.
9.1 Introduction

Are individuated and stereotypic impressions formed through the same categorization process? The answer to this question, based on the empirical evidence presented so far, is inconclusive. There are two main issues which need clarification before it is possible to provide a clear explanation of the impression formation process. The first concerns whether the different types of impressions formed of others are due to the salience of in- or outgroup membership. In experiments 2 and 3 there was some indication that the same ingroup member could be individuated or stereotyped depending on contextual factors. It needs to be clear that it is the level of abstraction at which impressions are formed and not whether the perceived is an ingroup or outgroup member which drives the formation of individuated and stereotypic impressions. The second issue is that we are yet to demonstrate clearly that interpersonal comparisons, and associated accentuation of self-other similarities and differences, are also dependent on contextual factors.

It is argued in self-categorization theory (see Chapter 5) that at the social level objects in the stimulus environment are perceived in
terms of their intragroup similarities and intergroup differences. When personal identity is salient this shifts to intra-individual similarities and inter-individual differences (Haslam et al. 1995a; Hogg & Turner, 1987; Oakes et al., 1994; Simon et al., 1995; for a different interpretation see Brewer & Gardner, 1996; Simon, 1993). An important aspect of self-categorization theory is the idea that interpersonal differentiation between ourselves and others occurs relative to those that define us as an ingroup member in the context of interest (e.g., Turner, 1985; Turner et al., 1987). In other words, we define ourselves and others as unique individuals in relation to higher order shared superordinate categories, and the salience of these categories varies. Individuated impressions are, therefore, as much based on relative interpersonal judgements as stereotypic impressions are based on relative intergroup judgements. Individuation is not characterised as being stable and absolute but relative and variable.

It is necessary to demonstrate empirically that individuated impressions are not more heterogeneous and variable in the abstract and have no special status as "accurate" stable representations relative to stereotypic impressions (e.g., Diab, 1963; Haslam et al., 1992). Our impressions of others change because they are comparative and relative to self-perception in a given context. We can form different impressions of the same person depending on our goals and motives as a perceiver. The way we define and think about ourselves and interpret inherent features of the situation also affects the way we perceive others (Lambert & Wedell, 1991; Park, DeKay & Kraus, 1994; Mischel & Shoda, 1995; Sedikides & Skowronski, 1993).
The main aim of the current study is to investigate relative self-other accentuation and to demonstrate that individuated impressions are not more heterogeneous and variable in the abstract, but that interpersonal differentiation, perceiving ourselves and others as unique and different, is comparative and relative to self-perception in a given context. It has been argued in the preceding chapters that in intergroup contexts the similarities within and differences between groups are accentuated when stereotypic impressions are formed. However, where there is no relevant outgroup, interpersonal comparisons become salient and the differences between ingroup members are accentuated.

In the present study comparative context - interpersonal and intragroup - was manipulated. As found in experiments 1 and 2 stereotype inconsistent information can be used to differentiate between ingroup members and stereotype consistent information best differentiates the ingroup from the outgroup. Therefore, if impressions of the same constant target are formed in interpersonal and intergroup contexts the content of impressions should be consistent with the defining ingroup in intergroup contexts but inconsistent with the defining ingroup in interpersonal contexts.

The salient identity of subjects was also manipulated. In one condition subjects' identity as females, and in the other, their identity as science students, was made salient. Subjects were asked to form an impression of a constant target simultaneously defined in terms of two ingroups - as a female science student. The salience manipulation should define the basis of comparison between the subject and target.
In the female identity condition they should compare as women and in the science identity condition as science students.

Importantly, though, the comparative context and salient identity manipulations should interact with one another, such that the content of impressions and pattern of self-other accentuation is divergent across conditions. In intragroup conditions the similarities between the targets should be accentuated, on female stereotypic dimensions in the female identity condition, and on science stereotypic dimensions in the science identity condition. In the interpersonal condition the accentuation of interpersonal differences between the subject and target should be on dimensions inconsistent with the stereotype of women in the female identity condition, and inconsistent with the stereotype of science students in the science identity condition.

It is, therefore, predicted that in intragroup conditions; (a) stereotypic impressions consistent with the defining ingroup should be formed (women or science students); and (b) the similarities between the subject and target should be accentuated on dimensions consistent with the defining ingroup. In interpersonal conditions it is predicted that; (a) individuated impressions should be formed of the target evidenced by descriptions of the target inconsistent with the defining ingroup; and (b) the differences between the subject and target should be accentuated on dimensions inconsistent with defining ingroup.

9.2 Method

9.2.1 Subjects and design

This study was conducted in first year laboratory classes using
female science students. Fifty-six participants were assigned to one of four conditions in a 2 (salient identity female, science) x 2 (comparative context: interpersonal, intragroup) between-subjects design. During debriefing six subjects revealed that they were suspicious about aspects of the study, so their data was not included in analyses.

9.2.2 Procedure

The study was conducted as part of a first year research participation tutorial. Initially, all subjects were allocated a code number and were asked to complete a supposedly unrelated task where they wrote down their sex, age, major of study and faculty. Information about subjects' sex and faculty of enrolment was required to select only female science students for the current study. Students were told that given the size of the class they would be divided up to complete a series of tasks. The code numbers of students who were female and enrolled in the science faculty were read out and these students were asked to accompany one of the researchers to an adjacent room. Subjects were not made aware of the basis of separation into two groups and given the small number of males in each tutorial class selection of all female students was not seen as problematic.

Once in the other room it was announced that they would be involved in a study of attitudes to success. Subjects in the female identity condition were asked to think about how being female related to their attitude to success and to write down six statements or attributes which described their attitude to success. The same process
was used for those in the science identity condition except that they completed the task in relation to being science students. Subjects were made aware that this information could be read by others.

The information was collected and a code letter was written in the top right hand corner. The experimenter also wrote the student's faculty and sex in an "office use only" section at the top of the page, while supposedly referring to enrolment details provided earlier. The aim of subjects describing their attitudes to success was to make their science identity and female identity salient, in the science and female identity conditions, respectively.

Those subjects in the interpersonal condition were then informed that the study was concerned with variations in attitudes to success. As part of investigating this issue subjects were told that the experimenter wanted to get volunteers in the session together in pairs to discuss success and look at variations in attitudes to success in more detail. Thus, subjects thought they would be discussing with one person in the room.

In the intragroup condition subjects were informed that we were interested in variations in attitudes to success between females and males in the female identity condition, and between science and arts students in the science identity condition. Subjects were led to believe that they could be involved in a discussion about attitudes to success in which they would be paired with a person in the room. This pair would then discuss with (depending on the salience condition) either a pair of males or a pair of arts students in the adjacent room.
In all conditions subjects were told that discussions were often found to be more productive if, prior to the discussion, participants had some information about who they would be discussing with. For this reason subjects were told that they would be given some information about their discussion partner. Subjects were handed a sheet of paper which (supposedly) contained the information just provided by another person about their attitudes to success.

In fact all subjects were handed the same information. They were asked to read the information provided by this other person (the target), to try and form an impression of this person, and then to turn the page face down on the front of the desk. Subjects were also told that they would be asked to answer a series of questions before the discussion phase of the study. Subjects read the information provided about the target and where then shown the various questions they would be asked to answer before the discussion. When subjects had completed these questions they were thoroughly debriefed.

9.2.3 Materials

The materials consisted of the information about the target person (who subjects thought they would be discussing with) and the questionnaire. All subjects were given the same target information. The six pieces of hand-written information were in fact bogus and developed so that two statements were consistent with being female (e.g., "be tolerant of others" and "be as creative as possible"), two statements were consistent with being a science student (e.g., "do things in a systematic and methodical way" and "think logically about
things") and two statements were neutral (e.g., "don't let things get you down" and "you have to enjoy what you do"). The statements consistent with being female were inconsistent with being a science student and vice versa. The "office use only" section at the top of the page also had the words "science" and "female" written by hand. Therefore, in all conditions subjects were given the information that the target was a female science student.

Subjects were also given a booklet containing the dependent measures. The booklet reiterated the instructions on the front and it was emphasised verbally that we would be getting volunteers together to discuss attitudes to success. In the intragroup condition, it was also emphasised that there would be discussions (depending on the salience condition) between males and females or arts and science students.

In much the same way as in experiments 1 and 2 the first question was a checklist where subjects were asked to read through fifteen words and underline those words typical of their impression of the target person. Of those words underlined they were then asked to select the five most typical of their impression and write them in the spaces provided. The fifteen words were pre-tested such that one third were stereotype consistent in terms of the salient categorization, one third were stereotype inconsistent (counter-stereotypic) and one third were neutral with respect to both female and science students' attitudes to success. Again those words consistent with female attitudes were those inconsistent with science students' attitudes to success and vice versa.
Following the checklist, subjects were asked to mark where they would place themselves and the person they would be discussing with on two dimensions consistent with being a science student (systematic and logical) and two consistent with being female (creative and tolerant). For example, the word "creative" was presented in front of a line 8.6 centimetres long labelled at one end as "less creative" and at the other as "more creative". Subjects had to mark two vertical lines reflecting the relative position of themselves (labelled with an S) and the person they would be discussing with (labelled with a P).

Subjects were then asked eight questions where they had to mark a response on a 9-point scale with appropriately labelled endpoints. The questions were: 1) How similar do you think you and the person you will be discussing with are to each other in general? 2) To what extent do you think you and the person you will be discussing with would agree with each other on attitudes to success? 3) To what extent do you think you and the person you will be discussing with would agree with each other in general? 4) How different do you think you and the person you will be discussing with are from each other in general? 5) How typical do you think the person you will be discussing with is of other science students? 6) How typical do you think the person you will be discussing with is of other females? 7) How difficult was it for you to form an impression of the person you will be discussing with? 8) How confident are you in your impression of the person you will be discussing with?
9.3 Results

9.3.1 Manipulation checks

Subjects were expected to identify as females in the female identity condition and as science students in the science identity condition. Subjects' self-ratings on the female dimensions (creative, tolerant) and science dimensions (systematic, logical) were used to check the salience manipulation. Self-ratings on the two female and two science dimensions were averaged and analysed using a 2 (identity) x 2 (comparative context) x 2 (dimension) ANOVA with repeated measures on the last factor. The interaction between identity and dimension was significant ($F(1, 46) = 4.26, p < .05$). Subjects rated themselves higher on female ($M = 5.33$) than science dimensions ($M = 4.85$) when their female identity was salient. As predicted, the opposite pattern was found when science identity was salient; subjects rated themselves higher on the science ($M = 5.13$) than the female dimensions ($M = 4.67$).

9.3.2 Type of impressions

The checklist results were analysed in the same way as in experiments 1 and 2 by looking at the frequency (adjusted) with which different types of words were used to describe the target. It was predicted that more inconsistent information would be used in interpersonal conditions and more consistent information would be used in intragroup conditions.

The frequency with which traits were selected was analysed in a 2 (comparative context) x 2 (identity) x 2 (type of trait information: consistent/ inconsistent) log-linear analysis. A significant interaction
was found between comparative context and type of trait information \( (z = 2.23, p < .05) \) with subjects using more consistent traits in intragroup contexts (\( f_s: IG \) (intragroup) = 29.81, IP (interpersonal) = 22.69) and more inconsistent traits in interpersonal contexts (\( f_s: IG = 20.19; IP = 28.37; \) see Figure 9.1). There was also a significant interaction between identity and type of trait information \( (z = 2.38, p < .01) \). In general, more consistent traits were used in the female identity condition and more inconsistent traits in the science identity condition.

![Figure 9.1. Selection of stereotypic and counter-stereotypic trait information in interpersonal and intragroup contexts.](image-url)
A stereotyping score amenable to parametric analysis, similar to that used in experiments 1 and 2, was also developed. Of the five words subjects selected as typical of their impression, consistent words were given a score of +1, inconsistent words a score of -1 and neutral words a score of 0. Scores were summed for each subject and could range between +5 and -5. A 2 (comparative context) x 2 (identity) ANOVA was used to assess the stereotyping measure. A main effect for comparative context was found ($F(1,46) = 5.89, p < .05$). Subjects used more stereotypic or consistent information in the intragroup condition than the interpersonal condition ($M_s$: IG = .74, IP = -.50, respectively). Subjects also used significantly more consistent information in the female identity compared to the science identity condition. This finding may reflect broader consensus about the female stereotype.

9.3.3 Impression content and accentuation measures

Analysis of the type of impression formed across comparative context conditions indicated that more inconsistent information was used in interpersonal contexts and more consistent information in intragroup contexts. However, the specific content of the impressions across identity salience conditions also needs to be assessed. In intragroup contexts, where there was a relevant and meaningful contrasting outgroup, subjects were expected to use information consistent with the defining ingroup category (i.e., information stereotypic of women in the female identity condition and information stereotypic of science students in the science identity condition). On the other hand, in the interpersonal context where there was no explicit contrasting outgroup and interpersonal comparisons were
relevant subjects were expected to use information less consistent with the defining ingroup category (i.e., information inconsistent with being a woman in the female identity condition, more male/science student information, and information inconsistent with being a science student, more arts/female information, in the science identity condition).

To assess the content of the impression in each of the four conditions the words selected as being most typical of impressions were examined. Although the measure is qualitative, more frequent use of particular words in describing impressions does provide some indication about the actual content of these impressions across conditions. For this purpose, the three words selected most often in the two intragroup and two interpersonal conditions will be considered (see Table 9.1).

In the female/interpersonal condition the words ordered, rational and accepting were selected most frequently, while in the science/interpersonal condition the most frequently selected words were imaginative, rational and tolerant. Two of the three words selected in each of these conditions are inconsistent with the respective salient identity. Ordered and rational are inconsistent with the female stereotype and imaginative and tolerant are inconsistent with the science student stereotype.

As can be seen from Table 9.1, in the intragroup conditions the most frequently selected words were generally consistent with the salient identity. In the female identity condition the three most
selected words were tolerant, flexible and sincere and in the science condition they were ordered, rational and tolerant. In both cases two of the three words are stereotypic of the ingroup category. Therefore, in all four conditions different words are being used to describe impressions and importantly in the two interpersonal conditions impressions are based on information inconsistent with the defining ingroup category.

Table 9.1

The selection of particular traits as most typical of impressions represented as a percentage

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Personal Female</th>
<th>Science</th>
<th>Group Female</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepting</td>
<td><strong>63.64</strong></td>
<td>46.15</td>
<td>46.15</td>
<td>46.15</td>
</tr>
<tr>
<td>Active</td>
<td>-</td>
<td>15.38</td>
<td>7.69</td>
<td>15.38</td>
</tr>
<tr>
<td>Competitive</td>
<td>9.10</td>
<td>-</td>
<td>-</td>
<td>7.69</td>
</tr>
<tr>
<td>Critical</td>
<td>9.10</td>
<td>7.69</td>
<td>-</td>
<td>7.69</td>
</tr>
<tr>
<td>Eager</td>
<td>9.10</td>
<td>15.38</td>
<td>15.38</td>
<td>15.38</td>
</tr>
<tr>
<td>Flexible</td>
<td>36.36</td>
<td>15.38</td>
<td><strong>53.85</strong></td>
<td>38.46</td>
</tr>
<tr>
<td>Honest</td>
<td>27.27</td>
<td>30.77</td>
<td>41.15</td>
<td>30.77</td>
</tr>
<tr>
<td>Imaginative</td>
<td>1.82</td>
<td><strong>92.31</strong></td>
<td>38.46</td>
<td>53.84</td>
</tr>
<tr>
<td>Ordered</td>
<td><strong>63.64</strong></td>
<td>30.77</td>
<td>23.08</td>
<td><strong>76.92</strong></td>
</tr>
<tr>
<td>Tolerant</td>
<td>54.55</td>
<td><strong>69.23</strong></td>
<td><strong>76.92</strong></td>
<td>61.54</td>
</tr>
<tr>
<td>Rational</td>
<td><strong>63.64</strong></td>
<td><strong>76.92</strong></td>
<td>46.15</td>
<td><strong>69.23</strong></td>
</tr>
<tr>
<td>Sincere</td>
<td>54.55</td>
<td>30.77</td>
<td><strong>53.85</strong></td>
<td>15.38</td>
</tr>
<tr>
<td>Sociable</td>
<td>36.36</td>
<td>30.77</td>
<td>38.46</td>
<td>7.69</td>
</tr>
<tr>
<td>Structured</td>
<td>54.55</td>
<td>38.46</td>
<td>46.15</td>
<td>53.86</td>
</tr>
<tr>
<td>Witty</td>
<td>-</td>
<td>-</td>
<td>2.69</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Scores reflect the percentage of subjects who selected each trait as typical of their impression of the target. Those in bold are the three most selected traits.
The accentuation measures also enable a more quantitative assessment of content of impressions. It was predicted that subjects would see themselves as relatively more similar to the target in intragroup conditions and relatively different from the target in interpersonal conditions. It was further predicted, based on the principles of categorization, that the subject and target would be judged as similar on dimensions consistent with the defining ingroup in intragroup contexts, and that the differences between the subject and target would be accentuated on dimensions inconsistent with the defining ingroup in interpersonal conditions.

Subjects were asked to mark where they would rate themselves and the target on four different dimensions, two consistent with being a science student (systematic and logical) and two consistent with being female (creative and tolerant). The difference between the subject's own position and that of the target was averaged for the science dimensions and female dimensions. Five outlying scores were adjusted to the next most extreme score. All difference scores were then analysed in a 2 (identity) x 2 (comparative context) x 2 (dimension) ANOVA with repeated measures on the last factor (see Table 9.2).

Typically subjects did perceive themselves as more similar across dimensions in the intragroup compared to interpersonal condition although this trend was not significant ($M$s: IG = -.57, IP = -.96; $F(1,46) = 2.73, p = .11$). The pattern of the means also suggests that in the intragroup condition subjects see themselves as more
similar to the target on female dimensions in the female identity than the science identity condition (Ms: FI (female identity) = -.58, SI (science identity) = -.82) and more similar on science dimensions in the science identity compared to the female identity condition (Ms: SI = -.17, FI = -.72). However, none of these comparisons were statistically significant. There is clearly a high degree of variability associated with some of the results. For example on science dimensions the standard deviation in the intragroup/female identity condition indicates that some subjects thought they were quite different from the target.

Table 9.2
Mean difference scores and standard deviations on female and science dimensions.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Personal</th>
<th></th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FI</td>
<td>SI</td>
<td>FI</td>
</tr>
<tr>
<td></td>
<td>(n=11)</td>
<td>(n=13)</td>
<td>(n=13)</td>
</tr>
<tr>
<td>Female</td>
<td>-.49 (.71)</td>
<td>-1.26 (1.20)</td>
<td>-.58 (1.87)</td>
</tr>
<tr>
<td>Science</td>
<td>-1.48 (1.46)</td>
<td>-.63 (1.13)</td>
<td>-.72 (2.44)</td>
</tr>
</tbody>
</table>

Note: FI = female identity, SI = science identity; all scores are negative which reflects that the subjects rated themselves higher on dimensions.

As predicted, there was also a significant interaction between identity and dimension ($F(1,46) = 4.66, p < .05$). Subjects rated
themselves as most different from the target on female dimensions in the science identity condition (Ms: FD (female dimension) = -1.04, SD (science dimension) = -.40) and the difference was greatest on science dimensions when their female identity was salient (Ms: SD = -1.07, FD = -.54; see Figure 9.2 where the scores are represented without the sign).

![Figure 9.2.](image)

Figure 9.2. Difference scores on female and science dimensions in the science identity and female identity conditions.

As can be seen from Table 9.2 the pattern of differentiation in interpersonal conditions is consistent with predictions. Subjects tend to be accentuating self-target differences on dimensions inconsistent
with the defining ingroup. In order to assess this pattern of results further a separate 2 (identity) x 2 (dimension) ANOVA with repeated measures on the last factor was conducted for interpersonal conditions. There was, as predicted, a significant identity by dimension interaction ($F(1,22) = 4.42, p < .05$; see Figure 9.3). As predicted, subjects accentuated the difference between themselves and the target on science dimensions when female identity was salient ($M_s: F_{D} = -.49, SD = -1.48$) and female dimensions when science identity was salient ($M_s: F_{D} = -1.26, SD = -.63$).

![Figure 9.3](image)

**Figure 9.3.** Difference scores on dimensions in the interpersonal/science identity and interpersonal/female identity conditions.
9.3.4 Analysis of other measures

The response scale measures were each analysed using 2 (identity) x 2 (comparative context) between subjects ANOVAs (see Table 9.3). There were significant main effects for comparative context on the items concerned with how difficult subjects found it to form an impression ($F(1,46) = 7.41, p < .01$) and their confidence in their responses ($F(1,46) = 6.10, p < .01$). Subjects found it more difficult to form impressions in the intragroup condition, where stereotypic impressions were formed ($Ms$: IG = 5.58, IP = 3.89, respectively) and also had most confidence in their impression in the interpersonal, female identity condition.

Table 9.3

Means for other response scale measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Identity salience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>IP</td>
</tr>
<tr>
<td>Similar to target</td>
<td>5.92</td>
</tr>
<tr>
<td>Agree with target</td>
<td>6.07</td>
</tr>
<tr>
<td>Agree target in general</td>
<td>6.23</td>
</tr>
<tr>
<td>Differ from target</td>
<td>4.46</td>
</tr>
<tr>
<td>Target typical science</td>
<td>5.77</td>
</tr>
<tr>
<td>Target typical females</td>
<td>6.54</td>
</tr>
<tr>
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<td>4.46</td>
</tr>
<tr>
<td>Confident impression</td>
<td>4.69</td>
</tr>
</tbody>
</table>

Note: IP = interpersonal, IG = intragroup.
9.4 Discussion

The results of this study clearly show not only that the same target can be individuated or stereotyped depending on the comparative context but that the process used to form both types of impressions appears to be categorization. First, it has been shown that it is not whether the target is an ingroup or outgroup member which dictates whether individuated or stereotypic impressions will be formed but, as self-categorization theory would predict, the level of abstraction at which impression formation occurs. The fact that more stereotype inconsistent information was used to describe impressions in the interpersonal conditions and more stereotype consistent information was used in intragroup conditions indicates that individuated and stereotypic impressions were formed depending on the comparative context manipulation. The use of more stereotype consistent information in the female identity condition may also reflect greater consensus regarding the female compared to science student stereotype.

Second, predictions regarding accentuation in interpersonal conditions were also supported. The way in which similarities and differences between self and other were accentuated across conditions was consistent with self-categorization theory's predictions. There was differential accentuation of self-other distinctiveness depending on the salient superordinate categorization. In interpersonal conditions differences between self and other were accentuated most on the dimensions inconsistent with the defining ingroup. When the context was defined in terms of being female, so that subject and target
compared as women, most differentiation occurred on male/science dimensions. That is, subjects emphasised their relative distinctiveness on systematic and logical, but not on creative and tolerant.

On the other hand, where the science category provided the frame of reference, so the subject and target compared as fellow science students, most interpersonal differentiation occurred on arts/female dimensions. That is, subjects defined the distinctiveness between their personal self and that of the target in terms of their relative creativity and tolerance, rather than in terms of how relatively systematic or logical they were. These results show that there is accentuation of self-other difference in interpersonal conditions on dimensions which differentiate ingroup members most—that is, those inconsistent with the ingroup category.

The pattern of accentuation in the intragroup condition also suggests that the subject and target were seen to be relatively more similar to one another. Further, it appears that subjects perceived that they were most similar to the target on female dimensions when their female identity was salient and science dimensions when their science identity was salient. Yet, the variability in the intragroup condition on the accentuation measures, and the associated weak effects, suggests that while completing these measures there could have been a tendency for some subjects to make interpersonal comparisons between themselves and the target. The assessment of accentuation involved subjects marking their own individual position and that of an individual target on four dimensions, and possibly this
task itself could engender interpersonal rather than intergroup comparisons.

The manipulation of intragroup conditions is clearly difficult because the intergroup context has to be sufficiently powerful such that intergroup rather than interpersonal comparisons are contextually relevant (clearly, this was also an issue in the intragroup condition in Experiment 2, see Chapter 7). As stated by Oakes et al. (1994, p. 190) "a person cannot easily be defined as an individual in contrast to ingroup members where the context provides a stronger contrast with outgroup members". In future work it will be important to increase the salience of intergroup manipulations in intragroup conditions. This could be done, for example, by having subjects rate two targets - an ingroup and outgroup member and through outgroup members being present in the same room throughout the study.

The findings of this study indicate that stereotypic impressions are formed in intergroup contexts and individuated impressions in interpersonal contexts. Further it appears that based on the principles of categorization the way in which oneself and others are defined can vary within a particular level of abstraction. In this study, two different stereotypic and two different individuated impressions were formed of the same target depending on contextual factors. Individuated impressions were not just characterised by the abstract, context-independent use of inconsistent information but impressions were formed based on the information which would differentiate individuals within the salient superordinate category most successfully. Differentiation occurred relative to the shared
superordinate ingroup membership which varied depending on contextual factors.

The fact that individuated impressions have also been shown to be accentuated depending on self-categorization and the defining ingroup category indicates that individuated impressions are not a base-line from which to assess distortion at the group level. If, as the results of this study suggest, others are individuated relative to self-perception in a particular context then there is no inherent accuracy or stability associated with perceiving others as individuals. Individuated impressions are no more context-independent than stereotypic impressions. Consistent with self-categorization theory, the results suggest that both individuation and stereotyping are manifestations of the categorization process.
10.1 Introduction

This thesis has examined the social psychological processes of impression formation, the manner in which judgements of others are made. In particular, the focus has been on explaining variation in impression formation and the process responsible for such variation. Our strategy has involved an assessment of whether individuated impressions are formed in a categorization-free manner and whether categorization is a process reserved only for the formation of stereotypic impressions. It has been argued that the way categorization is understood has fundamental implications for how the impression formation process is conceptualised and explained.

In this final chapter the key aspects of the analysis are retraced. The theoretical and empirical implications of the thesis are discussed. In effect the following question is addressed: What contribution has been made in this thesis? Based on the approach advanced throughout the last nine chapters a number of areas for future research emerge, and two of the most relevant are outlined. Finally, we return to, and reflect on, the social psychological validity of the comments made by Mr. Jim Bolger reported in the opening chapter.
10.2 Recapitulation

Chapters 1 to 5 of the thesis focused on different historical and contemporary understandings of how we come to understand others. Up until the 1960s impression formation research focused on the recognition of emotion and the ability to judge others. A number of different measures were developed to assess the individual target (the criterion) and also the judge's responses (the judgement). The overall discrepancy between the criterion and judgement was used to determine the accuracy of impressions. Personality and intelligence tests, expert judgments and ratings by those familiar with the target were used to define what the target was like. In Chapter 2, it was noted that these techniques are testimony to the assumption that accuracy was defined in terms of "the character of the beheld".

Some researchers recognised that cultural stereotypes (Taft, 1955) and accurate stereotypes (Cline & Richards, 1960) may increase judges' ability overall, but the idea that the target of judgement was anything other than a stable, constant, unique individual was not considered. In this early person perception research broader fundamental questions about the nature and role of person perception were neglected. It was simply assumed that the perceiver was a passive filter for information in the stimulus environment and that inputs (information about the individual target) should equate with outputs (the impression formed).

Belief in the inherent accuracy of individuated impressions, was also reflected in early stereotyping research. Lippmann, who originally defined stereotypes, wrote in his book Public Opinion in
1922 that "there is no shortcut through, and no substitute for, an individualized understanding" (p. 59). Asch, who is responsible for one of the most influential papers on impression formation, "Forming impressions of personality", summarised the research climate as follows: "the canons of objectivity require of us to understand persons first and foremost as individuals" (Asch, 1952, p. 238).

The assumed association between the perception of an individual person and accuracy permeated and moulded early stereotyping research. As a result, group-based perception and stereotypes were largely interpreted as being fictitious representations, abstracted from the target of judgement and in the "eye of the beholder". Stereotypes were considered "a very partial and inadequate way of representing the world" (Lippmann, 1922, p. 72) and were seen to exaggerate reality by marking out "certain objects as familiar or strange, emphasising the difference, so that the slightly familiar is seen as very familiar, and the somewhat strange as sharply alien" (Lippmann, 1922, p. 59).

The assumption that stereotypes were inherently distorted challenged researchers to determine the actual extent of their (in)accuracy. The goal from the outset was to explain the potentially erroneous nature of stereotypes, and the role of the perceiver attracted attention in the theories that developed. A popular view to emerge from the early stereotyping research was that stereotypes were described as "pictures in our heads that are essentially incorrect, inaccurate, contrary to fact, and, therefore, undesirable" (Fishman, 1956, p. 28).
A different interpretation of stereotypes, offered by a minority of researchers which included Asch and Sherif, was also outlined in Chapter 2. The view that perceivers were deceived by observing others in terms of their group memberships was challenged and the reality-based nature of perception was emphasised. The following quote from Asch (1952) was used to reflect the novelty of this alternative view:

Observing the distortion that follows from merging individuals with their groups, some have counseled that it is misleading to judge persons in terms of group relations ... it is wrong to assume that we can best achieve a correct view of a person by ignoring his group relations. (p. 238)

Likewise, Sherif believed that stereotypes reflected the perceived relationships between groups and were not the cause of intergroup relations; "attitudes toward other groups and images of them are products of particular relationships between groups, not their original cause" (Sherif, 1967, p. 25).

Three clear messages from this early social perception research can be summarised as follows: 1) individuated person perception is accurate; 2) stereotypes and group-based perception are distorted and inaccurate; and 3) stereotypes are valid and reflect the real perceived relationships between groups. All three of these messages, as seen in chapters 3, 4 and 5, are integrated in different ways in more recent accounts of impression formation. The way in which these messages have been combined in contemporary models has had profound implications for how social perception and the role of the perceiver is
In Chapter 3, two current impression formation models were described. Brewer (1988) in her dual process model and Fiske and Neuberg (1990) in their continuum model, brought together person perception and stereotyping work, and offered a more integrated understanding of how we form individuated and stereotypic impressions of others. Debates about the configural and elemental nature of impression formation, which had consumed researchers throughout the 1970s, were largely integrated into these models unresolved. In fact extensions of the basic elemental model, such as the role of the general impression in shaping the meaning of component information, were not incorporated. The notion that information given about a particular person could be processed in an attribute-by-attribute, elemental way was endorsed and contrasted with category-based perception.

It was noted in Chapter 3 that the distinction between an attribute or category label was not clearly defined in either model. It seems that an attribute is information abstracted from the perceiver (out there) and a category label is information inherent in the perceiver (stored in memory) which is disassociated from the perceived in any real sense. There is limited discussion about how knowledge regarding attributes and categories is developed, leading Zebrowitz-McArthur (1988) to refer to categories in the context of Brewer's (1988) model as "immaculate conceptions" (p. 107). Both Fiske and Neuberg (1990) and Brewer (1988) neglect the fact that regardless of whether you define a piece of information as an attribute or category label, use
of both "types of information" involves comparison and comparison fundamentally depends on the perceiver, their prior knowledge, experiences and goals (Tajfel, 1968, 1972; Turner, 1987).

It was also concluded in Chapter 3 that there was no strong evidence that impressions could be formed in an elemental way. At this point, then, adherence to two impression formation processes seemed more of a theoretical issue than a distinction based on clear empirical evidence. Therefore, Chapter 4 focused on the broader theoretical assumptions of recent impression formation models. In these models, and the social cognition literature which they mirror, stereotyping and categorization are used interchangeably. The human perceiver is understood to have limited cognitive capacity so categorization and stereotypes are used to limit the amount of information processed. Fiske and Neuberg (1990) argued that we "have neither the cognitive capacity or time to deal with all the interpersonal information ... For reasons of cognitive economy, we categorise others as members of particular groups" (p. 14).

Variables considered to undermine the use of category information in impression formation were also outlined in Chapter 4. Much of the research has focused on identifying factors which encourage the perceiver to allocate the additional resources required for the formation of more accurate individuated impressions. Of particular importance to the thesis, were motivational factors such as accuracy goals and outcome dependence. There has also been a recent emphasis on how perceiver goals and motivations impact on the way resources are allocated in impression formation (e.g., Fiske, 1993a: 272).
These recent impression formation models integrated and built on research which has been shaped by the first and second messages of the early social perception work (outlined in Chapter 2 and above). Stereotypes are fundamentally interpreted as more distorted, inaccurate representations of others than individuated impressions. The same impression formation process cannot be used when distorted, stereotypic and accurate, individuated impressions are formed, and this has led to the proposition that different impression formation processes must be responsible for the two types of impressions. How can the same process lead to both accuracy and distortion? For theoretical reasons two distinct processes are required to explain impression formation, and variations in impressions, in these recent models (see also Hilton & von Hippel, 1996).

A pervasive assumption of the early social perception, and more recent stereotyping research, is that the individual is the only psychological reality and that social processes can be reduced to, and best explained by, individual processes. The emphasis on the individual and associated reductionism is reflected in the social cognitive analysis of impression formation, where it is argued that to perceive others as individuals is most accurate and valid.

An alternative approach was outlined in Chapter 5. Building on the work of Sherif and Asch, which shaped the third message of the early social perception work (outlined in Chapter 2 and above), a distinct social identity theory and self-categorisation theory approach
to social perception has developed. The fundamental distinction is that the reality of the group and group differences are recognised. The work of Henri Tajfel and colleagues formed the basis of social identity theory. Tajfel's research showed that categorization and accentuation were normal psychological processes. Through the minimal group studies Tajfel and others were also able to show the impact of social factors on individual psychological functions. Definition as a group member was found to generate behaviour which favoured the ingroup and motivated differentiation from the outgroup. The definition of oneself as an interchangeable group member was seen to reflect the social psychological reality of group behaviour and the salience of social identity.

Self-categorization theory provides a more detailed examination of the psychological relationship between the self and the group. A completely different conceptualisation of categorization has emerged within this framework. Categorization, as outlined in Chapter 5, is recognised as a dynamic, meaningful, context-dependent assessment of relevant similarities and differences which gives stimuli meaning and therefore necessarily forms the basis of all social perception. Categorization, based on the principles of perceiver readiness and comparative and normative fit, represents reality from the perceiver's perspective.

The approach advanced in this thesis was based on self-categorization theory and this theory shaped the direction of the empirical work. More specifically, the thesis tried to elaborate the implications of self-categorization theory for the understanding of
impression formation. Two aspects of the categorization process, directly related to the thesis, were discussed in Chapter 5: 1) categorization is the only mechanism through which stimuli are given meaning and as such, 2) the formation of individuated and stereotypic impressions of others must be based on the same categorization process. Impressions were described as being relative to self-perception in a specific context which could be based on comparisons within groups (interpersonal comparisons where individuated impressions are formed) or comparisons between the ingroup and the outgroup (intergroup comparisons where stereotypic impressions are formed).

The juxtaposition of the social cognition and self-categorization theory approaches, outlined in chapters 3 to 5, framed the empirical work of the thesis. Two experiments, reported in chapters 6 and 7, empirically investigated whether it is a motivation to pay more attention or contextually relevant self-other comparisons, that determines when individuated and stereotypic impressions of others will be formed.

The results of Experiment 1 indicated that individuated impressions were formed when interpersonal comparisons within an ingroup were relevant and that in intergroup contexts there was increased stereotyping. The manipulation of interdependence did not systematically impact on the content of impressions, a finding inconsistent with the argument that when a motivation exists to pay more attention individuated impressions would result.
In this first experiment the level of abstraction, interpersonal or intergroup, was confounded with whether the target was an ingroup or outgroup member. Subjects were told that their opponent had the same problem solving style as themselves in the interpersonal condition and the opposite problem solving style in intergroup conditions. To fully explore the predictions made by self-categorization theory regarding context-based variations in impression formation it was necessary to design a second experiment where subjects formed impressions of an ingroup member in an interpersonal and intergroup context (intragroup condition). Accuracy goals were used to manipulate the level of attention allocated to the impression formation process. The results indicated that an ingroup member could be individuated in interpersonal contexts and stereotyped in intergroup contexts.

Provision of an accuracy goal did not straightforwardly motivate subjects to form more accurate individuated impressions. It was apparent, however, that accuracy goal instructions could interact with features of the comparative context to influence the salience of interpersonal or intergroup comparisons in the intragroup condition. Further, it was suggested that motivational factors such as outcome dependence and accuracy goals may contribute to the definition of the comparative relations between the perceiver and the perceived in implicitly interpersonal or intergroup terms.

The results of experiments 1 and 2 indicated that individuated impressions may not be formed through a distinct resource consuming categorization-free process and encouraged more detailed investigation.
of the relationship between categorization and impression formation. Therefore, in experiments 3 and 4 the focus turned to the categorization process. In particular it was argued that if it could be shown that self-other similarities and differences were accentuated when individuated impressions as well as when stereotypic impressions were formed, then this would provide evidence that categorization underpins variations in impression formation.

In Experiment 3, it was shown that background information did impact on the way the two constant targets were categorized. Further, depending on the categorization of the targets, as members of the same group, different groups, or as individuals, the pattern of accentuation varied. What was learnt in this study was that the dimensions used to assess accentuation had to be directly related to the categorization of the targets and that in interpersonal conditions a superordinate ingroup category needed to be manipulated. It was also concluded, that what had to be demonstrated was that the same target could be individuated in different ways depending on self-categorization in a particular context.

In Experiment 4 there was evidence that the way we differentiate ourselves from others in interpersonal terms varies depending on categorization-in-context. In other words, individuated impressions are as much based on relative self-other interpersonal judgements as stereotypic impressions are based on relative intergroup comparisons. In Experiment 4 a constant target was defined in terms of two ingroups - as a female science student. In one condition subjects' identity as females, and in the other, their identity
as science students, was made salient. The comparative context - interpersonal or intragroup - was also manipulated. Consistent with the argument developed in experiments 2 and 3, the target was found to be individuated in interpersonal conditions evidenced by greater use of counter-stereotypic information. Stereotypic impressions were formed in the intragroup condition, where an impression of an ingroup member was formed in an explicit intergroup context.

Predictions regarding accentuation in interpersonal conditions were also supported. The way in which similarities and differences between self and other were accentuated across conditions was consistent with self-categorization theory's predictions. There was differential accentuation of self-other distinctiveness depending on the salient superordinate categorization. Most importantly, in the interpersonal condition it was found that the accentuation of differences between the subject and target were on dimensions inconsistent with the stereotype of women in the female identity condition, and inconsistent with the stereotype of science students in the science identity condition.

In Experiment 4, two different stereotypic and two different individuated impressions were formed of the same target depending on contextual factors. Individuated impressions were not just characterised by the abstract, context-independent use of inconsistent information but impressions were formed based on the information which would differentiate individuals within the salient superordinate category most successfully.
The fact that individuated impressions were formed depending on self-categorization in a particular context suggests that there is no inherent accuracy or stability associated with perceiving others as individuals. Individuated impressions are no more context-independent than stereotypic impressions. It was concluded that there was evidence that our impressions of others vary depending on self-categorization in a particular context, and therefore that both individuated and stereotypic impressions are formed through the same categorization process but operating at different levels of abstraction.

10.3 Theoretical implications: What contribution has been made in this thesis?

At a theoretical level the self-categorization theory analysis, that all impression formation is categorization, has been investigated. The operation of the categorization process at different levels of abstraction has been systematically explored. General hypotheses based on the theory have been generated and have received strong support. The analysis has demonstrated, most significantly, the utility of self-categorization theory in the area of impression formation.

In a number of respects the theoretical and empirical insights gleaned from the thesis are at odds with current impression formation models and the broader social cognition conceptualisation of the categorization process. First, the analysis tends to suggest that stereotypic impressions are not the simple product of limited cognitive capacity. Under conditions argued to motivate perceivers to allocate more attention there was no systematic evidence of more individuated or less stereotypic impressions being formed. Further, we have
suggested that the results achieved in previous research using motivational factors such as interdependence and accuracy goals may in fact be attributable to implicit variations in the comparative context rather than attentional resources.

The second problem that this thesis presents for the social cognitive perspective, is that the formation of individuated and stereotypic impressions has been shown to reflect meaningful and valid, context-dependent variations in self-categorization. Stereotypic impressions have only been formed where group-based self-other comparisons have been relevant. Individuated impressions have been formed when within-group, interpersonal comparisons were meaningful. The impressions formed of others at different levels of abstraction have not been distorted or inaccurate but have appropriately reflected lawful and relevant comparisons between people.

However, the finding which presents the most difficulty for recent impression formation models, is that stereotypes may not be unique in being formed through categorization. There is evidence that the formation of individuated impressions is relative to self-perception and higher order superordinate categories. Most significantly though, the results suggest that individuated impressions, evidenced by increased use of inconsistent information, are based on the accentuation of relevant self-others similarities and differences.

It is this evidence of accentuation when both individuated and stereotypic impressions are formed which undermines the idea that
one type of impression is more accurate than the other. If two distinct individuated impressions are formed of the same target which is the accurate impression? Which impression is based on the "actual" idiosyncratic characteristics of the person? Which impression is based on the true interpretation of the given attributes? The evidence in Experiment 4 of this thesis suggests that the same target can be individuated in different ways depending on self-categorization. There is no sense in which a target is described in some "absolute" accurate way. The way in which we individuate others and differentiate between people is a relative, comparative, context-dependent judgement.

Pulling these three points together, combined they seem to indicate that the formation of individuated impressions has no special status relative to stereotypic impression formation. Individuated impressions are not formed using a distinct categorization-free process, individuated impressions do not set a standard by which the distortion of group-based impressions can be evaluated, individuated impressions are not based on some absolute "accurate" idiosyncratic attributes. The formation of both individuated and stereotypic impressions appear to involve categorization and accentuation, and to veridically reflect the relational properties between people in the context of interest. All impressions are based on relative, comparative judgements that depend on the salient self-category of the perceiver which is shaped by context.

10.4 Future directions for research

There is clearly more work to be done before the role of the
perceiver in social perception will be fully realised and understood. A number of unresolved issues and future directions for research emerge from this thesis. However, two become especially important in light of our conclusions that individuated impressions have no special standing relative to stereotypic impressions. First, further evidence is needed that individuated impressions and interpersonal comparisons are made relative to context-dependent self-categorization. Second, the "misleading" role of inconsistent information in impression formation requires investigation.

10.4.1 Variability of self-perception

Clearly, further evidence of the variability and relativity of self-other perception where interpersonal comparisons are concerned is needed. The work in this thesis has focused on the accentuation of self-other differences depending on contextual factors. Yet, self-categorization theory is explicit in arguing that interpersonal comparisons are characterised by the accentuation of interpersonal differences and intrapersonal similarities. Accentuation of intrapersonal similarities is an area which requires attention. It is possible, that just as the accentuation of intragroup similarity has been found to vary across intergroup and intragroup comparative contexts (e.g., Haslam et al., 1995a), the pattern of personal accentuation of similarity and difference may vary depending on whether the comparison is interpersonal or intrapersonal.

For example if an interpersonal comparison is based on the dimension "sociable" the perceiver may see themselves as always being "sociable" across situations, in comparison with other relevant ingroup
members. There would be limited variability in how they perceive themselves in terms of this dimension. Sociability could be interpreted as a more stable disposition which describes oneself as an individual in the context of interest. On the other hand, where the comparative context is intrapersonal, encouraging self versus self comparisons across situations, there may be far more variability on the dimension "sociable" because the perceiver knows they are not always characterised in this way. Situational attributions may be used to understand and explain this variability. In interpersonal contexts dispositional attributions may be likely but situational explanations come to the fore when intrapersonal comparisons are made.

This analysis based on self-categorization at the interpersonal level could help explain two reliable social psychological findings: 1) the fundamental attribution error (e.g., Ross, 1977), where others' behaviour tends to be explained in dispositional rather than situational terms, and 2) the actor/observer effect, where it has been consistently found that we explain our own behaviour in situational terms whereas others who view the same behaviour will apply dispositional causes (e.g., Jones & Nisbett, 1972; Watson, 1982). Rather than fixed effects both of these phenomena could be outcomes of experimental procedures which inadvertently define the relationship between the subject and target in stable ways. For example, explaining one's own behaviour may invoke intrapersonal comparisons, but when we explain others' behaviour or other's explain our own behaviour interpersonal comparisons are relevant.

It will be useful in the future to assess whether interpersonal or
intrapersonal explanations are the basis of such results. Investigation of the variability in self-categorization and the role of categorization and accentuation in intrapersonal and interpersonal comparisons needs to continue. The understanding of stability and change in the self-concept is implicated in such investigations (Onorato, 1996; Turner et al., 1994). The self-categorization theory analysis could be as influential in our understanding of variables associated with individuated perception (e.g., personality, consistency) as it has been in the domain of stereotyping and intergroup relations.

10.4.2 The role of inconsistent information

The second direction for future work concerns inconsistent information. Inconsistent information has played a vital role in the impression formation literature. Its use has been taken as evidence for: 1) accuracy versus distortion in impression formation; 2) use of attributes versus category labels; and 3) the formation of individuated versus stereotypic impressions. However, there are clear contradictions in the way inconsistent information has been interpreted and understood and disagreement about the role of inconsistent information in person memory is one current example (Hastie, 1980; Hastie & Kumar, 1979; Rothbart et al., 1979; Rojahn & Pettigrew, 1992; Snyder & Uranowitz, 1978; Srull, 1981; Wyer & Srull, 1989). Inconsistent information has to be examined more closely and its role in social perception delineated.

In a recent review of literature examining expectancy-congruent and expectancy-incongruent information Stangor and McMillan (1992) provided an analysis of factors which may influence the integration,
reinterpretation or exclusion of inconsistent information in impression formation. Based on a meta-analysis they concluded that there were discrepant findings that could not be accounted for by proposed models of person memory. They incorporated perceiver motivations into their own analysis (see also Ruscher, Hammer & Hammer, 1996). Two such motivations were: 1) impression-accuracy and 2) impression-maintenance. It was argued that the fate of inconsistent information in impression formation is distinct depending on the perceiver's motivation. If an impression-accuracy goal exists then inconsistent information will be integrated into the impression. On the other hand, if impression maintenance is relevant then inconsistent information is distorted or ignored.

Three conditions are outlined which specify when one or the other goal will be relevant. Stangor and McMillan (1992) argued that if the goal is to form "accurate, complete impressions of targets inconsistency-resolution motivations should be high" (p. 57, emphasis added). Second, inconsistency resolution may also take place where new impressions are being formed of a target. If well developed expectations about a target already exist then the impression-maintenance mode may prevail. Another factor which may affect the degree to which inconsistent information is incorporated in the impression of a target is processing demands. If the processing of stimulus information is too complex then it may be difficult to integrate the inconsistent information and a shift from the impression-accuracy to impression-maintenance strategy may result (see also Stangor & Ford, 1992).
The parallels between Stangor and McMillan's (1992) analysis and that of recent impression formation models is clear. But Stangor and McMillan do make explicit the idea that the role of inconsistent information in impression formation is complex - information can be ignored, reinterpreted and integrated (see also Fiske & Neuberg, 1990). However, there is evidence in this thesis that inconsistent information is not ignored when processing demands, as manipulated through motivation factors, are high. Individuated impressions, evidenced by increased use of inconsistent information, were formed in both accuracy goal and no accuracy goal conditions when interpersonal comparisons were relevant. Also, stereotypic impressions of the same target were formed in intergroup contexts even though the subject and target were interdependent or an accuracy goal was provided. It would, however, be worthwhile to examine Stangor and McMillan's (1992) predictions regarding the use of inconsistent information when existing and new impressions are being formed. There is a clear need to move away from one-off impressions of strangers in impression formation work. Generally, though, evidence in this thesis would suggest that the role of inconsistent information is not as straightforward as popular models like Stangor and McMillan's (1992) would suggest.

There is a need to explore more closely what inconsistent information is and its role in impression formation. In fact, it may clarify some underlying assumptions in the impression formation literature if we moved away from terms like consistent or inconsistent information. These terms suggest a fixed, static relationship between given group memberships and given attributes. The results of the
empirical work reported in this thesis indicate that consistent information is used to differentiate ingroup from outgroup and inconsistent information differentiates between individuals within groups. Therefore, instead of terms such as consistent or inconsistent information it may be useful to refer to differentiating information at different levels of abstraction. The emphasis on differentiating information would also clarify the debate about what is an accurate impression. At present, integration of information which differentiates between individuals is seen as more accurate than information that differentiates between groups.

Based on the results in this thesis it seems that the information used in impression formation is that which makes sense to the perceiver given the comparative relationships between people in a given context. Dynamic explanations can be developed to form integrated, meaningful impressions from what in the abstract could be defined as, consistent or inconsistent information (e.g., Asch & Zukier, 1984; Yzerbyt et al., 1997). The role of inconsistent information from the perspective of the perceiver as a meaning seeker needs further clarification (Vonk, 1994) otherwise inconsistent information will continue to be seen as the panacea through which accurate perception and behavioural and attitude change can occur.

10.5 Final comments

In the opening paragraph of this thesis a statement made by Mr. Jim Bolger was reported. He commented in relation to racism that:

There are certain politicians, I guess, all around the world, your
country and mine included who can't handle the race issue. They always go to extremes . . . There are people who can't seem to understand that you judge people on who they are, not which country they've come from, what the colour of their skin is or the culture of their origin. (cited in The Australian, 2 October, 1996, emphasis added)

Given the approach advanced in this thesis it is now possible to comment on the social psychological validity of Bolger's analysis. Impression formation is clearly not as straightforward as Bolger suggests. Most significantly, social psychology is divided about what "who they are" means.

The position argued throughout this thesis clearly rejects the conventional wisdom that to perceive others as individuals is inherently accurate and that to understand others in terms of their group affiliations is necessarily misleading and erroneous (e.g., Asch, 1952; Oakes & Turner, 1990; Vinacke, 1957). It has been explicitly argued that individuated impressions are comparative, context-dependent judgements which have no special status as being more accurate, valid and meaningful than impressions based on group memberships. The overall message is that all our impressions of others are comparative, not absolute, judgements.
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APPENDIX Ia - SUMMARY STATISTICS FOR EXPERIMENT 1 (CHAPTER 6)

Summary statistics from the 2 x 3 ANOVA's on the following measures: impression of ingroup (similar ingroup, common ingroup, representative ingroup, like ingroup), impression of opponent (similar opponent, common opponent, agree opponent about problem solving, agree opponent in general), general attitude to competition, anticipated performance in competition, type of impression measure, stereotyping score, recall of statements score and manipulation check measures (agree problem solving style, concerned opponent's performance, opponent's influence on draw for the prize).

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Note underlined p < .05; Inter = Interdependence; Comcon = Comparative context.
**APPENDIX Ib SUMMARY STATISTICS FOR EXPERIMENT 2 (CHAPTER 7)**

Summary statistics from the 2 x 3 ANOVA's on judgements of similarity to opponent/team mate (similarity, agreement), confidence in performance, effort in impression (effort, attention, difficulty), accuracy of impression, confidence in assessment of problem solving style, stereotyping score, recall of total statements, recall of actual statements, rank of informativeness of statements.

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Note: **underlined** p < .05; Acc = Accuracy; Comcon = Comparative context.
APPENDIX Ib SUMMARY STATISTICS FOR EXPERIMENT 2 (CHAPTER 7) - continued

Summary statistics from the 2 x 2 ANOVA's on the self-ratings on the four trait measures (imaginative, methodical, reasoned, spontaneous).

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Note: Missing data for one subject
### APPENDIX Ic SUMMARY STATISTICS FOR EXPERIMENT 3 (CHAPTER 8)

Summary statistics for one way ANOVAs on measures concerned with the relationship between target 1 and target 2 (similarity, agreement on video, agreement in general, similar attitude to success, have things in common, like one another, would get along), successfulness of target 1 and target 2, and the measures of confidence in responses, difficulty in completing tasks and interest in study.

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Note: Gp = anticipated categorization of targets
Summary statistics from analysis of Within-Subjects Effects:

Difference self and other: Dimension (faculty, gender, individual, ws) x Background information (faculty, gender, individual).

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Ratings of targets on practical dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).

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Ratings of targets on warm dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).

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### Imaginative Dimension

**Ratings of targets on imaginative dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).**

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### Communicative Dimension

**Ratings of targets on communicative dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).**

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### Friendly Dimension

**Ratings of targets on friendly dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).**

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Ratings of targets on sensitive dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).

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Ratings of targets on creative dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).

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Ratings of targets on methodical dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).

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Ratings of targets on successful dimension: Target (target1, target2, ws) x Background information (faculty, gender, individual).

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APPENDIX 1d SUMMARY STATISTICS FOR EXPERIMENT 4 (CHAPTER 9)

Summary statistics from the 2 x 2 ANOVA's on the stereotyping score and other response scale measures (difficulty, confidence, self-other similarity, self-other difference, agreement about problem solving, agreement in general, target typical of science, target typical of female).

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<th>Difficulty (MS, F)</th>
<th>Confidence (MS, F)</th>
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<th>Difference (MS, F)</th>
<th>Agree (MS, F)</th>
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<th>Typical female (MS, F)</th>
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<td>32.77, 7.41</td>
<td>18.09, 6.10</td>
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<td>.34, .29</td>
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<td>1.39, .31</td>
<td>10.04, 3.39</td>
<td>4.39, 1.82</td>
<td>1.64, .69</td>
<td>.60, .25</td>
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Note: Context (con) = comparative context; identity (ident) = salient identity
APPENDIX 1d SUMMARY STATISTICS EXPERIMENT 4 (CHAPTER 9) - continued

Summary statistics for analyses involving within subjects factors

Ratings of self on female and science dimensions: Identity (female/science) x Context (interpersonal or intragroup) x Dimension (female or science, ws)

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Difference self-other ratings: Identity (female/science) x Context (interpersonal or intragroup) x Dimension (female or science, ws)

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Difference self-other ratings: Identity (female/science) x Dimension (female or science, ws) for interpersonal conditions only

<table>
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