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To cite this article: Martin Loosemore & Chin Chin Tan (2000) Occupational stereotypes in the construction industry, *Construction Management and Economics*, 18:5, 559-566, DOI: [10.1080/014461900407365](https://doi.org/10.1080/014461900407365)

To link to this article: <https://doi.org/10.1080/014461900407365>



Published online: 21 Oct 2010.



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Occupational stereotypes in the construction industry

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Received 20 January 1999; accepted 6 May 1999

An investigation of occupational stereotypes in the construction industry provides insights into the perceptions and expectations which different occupational groups have of each other. The results are valuable in the reduction of uncertainty, misunderstanding and conflict within construction projects and do not support the widely held view of institutionalized confrontational relationships. Instead, there appears to be a natural degree of goodwill underlying interpersonal relationships although it is delicate, precarious and easily destroyed by insensitive managerial practices.

Keywords: Stereotypes, culture, values, attitudes, beliefs, communication, conflict

Introduction

Organizational changes in the construction industry, between the middle ages and the nineteenth century, led to the demise of individual artisans and to the domination of large capitalist contractors and a proletariat of waged labour (Musgrave, 1994). These changes, fuelled by the process of industrialization, led to the development of the professions and a hierarchical structure of social superiority with the architect at its pinnacle (Bowley, 1966; Bowyer, 1973; Macdonald, 1995; Hindle and Muller, 1996). Over time, professional institutions have developed vested interests in maintaining the roles which have provided their social status, cementing them in place through their control over the educational system and standard forms of construction contracts (Bowley, 1966; Wilton-Ely, 1977; NEDC, 1983; Crinson and Lubbock, 1994). Thus, it is not surprising to find much contemporary evidence that hierarchical images of professional status remain deeply rooted within the modern construction industry's social fabric (Faulkner and Day, 1986; Lang, 1992; Newcombe, 1994; Marshall, 1997).

From the professionalization of the construction industry emerged distinct sub-cultures defined by

unique beliefs, values, attitudes, languages, rituals, codes of conduct, codes of dress, expectations, norms and practices (Emmerson, 1962; Bennett and Whittaker, 1994). This provided the foundations for the development of strong occupational stereotypes which have been reinforced by the transitional nature of construction activity (Emmerson, 1962; Faulkner and Day, 1986; Seymour and Rooke, 1995; Munns, 1996). As Munns argues, in a transitional society, people have no alternative other than to base their relationships upon preconceived and standardized expectations of other's motives and behaviour patterns. While Faulkner and Day (1986) found a slight indication that new project procurement systems provide a more stable social environment, Azar (1997) suggests that the influence of stereotypes may also be strengthened by other factors such as the industry's confrontational, macho and time-pressured culture (Gale, 1992; Latham, 1994).

While there is research to indicate the existence and influence of occupational stereotypes within the construction industry, there is only anecdotal knowledge of their nature. Within this context, the aim of this paper is to explore the nature of occupational stereotypes within the construction industry. More specifically, it is to investigate the way that occupational

groups perceive each other. This is distinct from investigating 'sociotypes', which are the actual characteristics of occupational groups, an important distinction, since any attempts at categorization could reinforce stereotyping in the construction industry and perpetuate the problems this paper seeks to reduce (Deresky, 1994).

Stereotypes

The term 'stereotype' was introduced by Lippman (1922) to refer to people's tendency to categorize others into distinct social groups and to arbitrarily generalize about the traits which distinguish all the members of those groups from each other. Stereotypes are differentiated from other generalizations by their over-simplistic, erroneous, evaluative, extreme and negative nature and by their resistance to modification. Collectively, these attributes indicate that they are the product of faulty reasoning and motivational biases. People stereotype because the cognitive process of categorization simplifies perception and is fundamental to the adaptive functioning of humans in complex, uncertain and novel situations. Thus, stereotyping is an uncertainty-reducing device which serves to structure the potentially infinite variability of stimuli into a more manageable number of distinct categories (Hogg and Abrams, 1988; Sawin, 1995). In essence, it enables people to simplify and reduce the unpredictability of their social world by placing themselves and others into distinct social categories and there is likely to be a particularly strong tendency to do this in people who are guided by scientific values such as those which predominate in the construction industry (Seymour and Rooke, 1995).

Stereotypes as a barrier to communication in the construction industry

Brewster-Smith (1972) and Manis (1996) argue that stereotypes are grounded in people's belief systems which shape their attitudes and, in turn, their behaviour, towards each other in a social setting. The contemporary view is that stereotype beliefs are held in the form of mental images and, that over time, they become deeply ingrained into a person's belief system, making them resistant to change (Ashmore and Del Boca, 1981; Sawin, 1995). Since beliefs are essentially preferred channels of communication (Ruesch and Bateson, 1968), information from new experiences tends to be filtered of non-conforming elements to produce a self-fulfilling prophecy (Lord *et al.* 1979). It is this subconscious process of 'selective perception' which represents a significant threat to the quality of decision-

making, communication and inter-personal relationships in organizations (Langdon and Marshall, 1998).

Although, Azar (1997) recognizes that people are influenced by stereotypes to differing degrees, arguably, the most worrying thing about stereotypes is that they are contagious. That is, they tend to influence the behaviour of people who do not believe in them. For example, in the area of race relations, Azar (1997) has found that even people who score low on the Modern Racism Scale (MRS), a widely used test of prejudice, tend to show bias when interacting with certain ethnic groups. In particular, they may avoid eye contact, physical closeness or act less friendly. The explanation is that even if people do not hold their peer's beliefs about certain cultural groups, an awareness of them is enough to influence their behaviour in an unintentional, spontaneous, subconscious, subtle and covert way (Devine, 1997).

Thus stereotypes in the construction industry can be viewed as a set of enduring, socially shared beliefs which have accumulated as a result of centuries of tradition. These stereotypes damage communications by isolating behavioural traits, thereby ensuring that communication with a particular culture is limited to the dictates of those stereotypes. As Munns (1996) argued, the problems of communication and decision-making which result from widely held stereotypes are likely to be a contributory factor in the relatively high level of conflict that characterizes the construction industry. While Munn's work was valuable in investigating perceptions of integrity, confidence and trust between client's, professional practices and contracting firms, there is a need to build a more detailed understanding of stereotypes in the construction industry. Such knowledge could improve communications, reduce misunderstanding and thereby the incidence of conflict in construction projects by helping people to understand the underlying rationale of their own and others' behaviour, thereby increasing tolerance and flexibility in inter-personal relationships. As De-Bono (1991) argues, the rigidity of stereotypes causes people to see things in 'black-and-white' terms rather than the 'tone-of-grey' which is needed to move people from an argumentative idiom to an explorative one where win-win solutions are capable of being explored.

Method

Measuring occupational stereotypes involves measuring attitudes and beliefs, beliefs representing the characteristic traits we attribute to particular social entities and attitudes representing people's positive or negative evaluations of them (Fishbein and Ajzen, 1975). The majority of early stereotype research

concerned itself with issues of race although more recently there has been growing interest in the issues of gender and occupational groups. One of the earliest investigations of stereotypes was conducted by Katz and Braly (1933) who asked 100 white American students to select traits which they typically associated with ten ethnic groups from a predetermined list, the level of agreement relating to a particular ethnic group being taken as an indication of stereotype strength. This process of direct inquiry, where respondents are asked to give their evaluative reaction to something or someone, continues to form the basis of most studies of stereotypes (Tajfel, 1981; Manis, 1996). However, while this approach, which is usually administered by a questionnaire, is useful, its reliability depends upon its proper design. In particular, if the traits presented to respondents are not carefully considered, the result will be a self-fulfilling prophecy where respondents are guided to respond in a way which confirm the researcher's stereotypes. In this sense, asking a respondent to volunteer their own list of traits may be a more accurate way of measuring stereotypes, although the issue of data control then becomes an issue. Another problem with relying only upon questionnaires relates to the lack of triangulation in such strategies. According to Das (1983), the best attitudinal research combines a variety of methods which are able to focus upon different dimensions and perspectives of a phenomenon. This is particularly important in stereotype research because the emotive nature of the cognitive processes being investigated are likely to introduce bias into the research results, if considered from a single source. When properly designed, triangulated research methodologies have a mutually corrective effect and provide a rich and minimally biased portrait of reality. For this reason, this research employed a method of three dimensions, each being applied to a different sample of respondents.

The first dimension

The first dimension of the research method was based around the contemporary view of stereotypes as mental images in people's minds. An illustrator, who had no special knowledge of the construction industry, was commissioned to depict certain groups of traits in pictorial form which were then presented to respondents for association with a range of occupational groups. The occupations investigated were architects, quantity surveyors, contractors and engineers (structural and services), each being required to identify an image which conformed with their stereotype view of the others. This technique, known as 'imaging', is similar to that used by Croxton *et al.* (1989) in their investigation of prestige on occupational stereotypes

and, is commonly used by psychologists to test the way that people see the world around them (Harrison, 1971). It was originally developed by McClelland (1961) and essentially involves presenting people with pictures and analysing the content of stories they tell about them. It is a powerful technique to find out about people's beliefs as is illustrated by Azar (1997) who reports an experiment where white subjects responded faster to negative adjectives after being exposed to a picture of a black person, compared to a picture of a white person.

In our research, respondents were presented with a series of images in a questionnaire and were asked to associate them with different occupational groups in the construction industry. Respondents were encouraged to return the questionnaire wholly or partially unmarked if they sensed no associations. The behavioural traits which formed the basis of each image were obtained from Anderson (1968), who ranked 550 personality traits by their perceived 'like ability'. These were split into 11 groups of 50 traits, from which five were randomly selected for incorporation into 11 images. Each image was restricted to five traits on the advice of the illustrator. While this method of using images allowed the identification of people's *beliefs* about different occupational groups, the real value of Anderson's model was its ability to attribute an evaluative score to each image thereby permitting the assessment of people's *attitudes* towards different occupational groups. This was done by attributing each trait incorporated into an image, a 'likeability' score which varied from 1 to 555 according to its ranking, the lower the score the more amiable the attitude reflected in the image. An example of three images which were used in the research with their corresponding traits and 'likeability' score (in brackets) are illustrated in Figure 1.

The complete set of images presented to respondents represented the full spectrum of traits from the most positive to the most negative and apart from the traits portrayed in the above images, other traits portrayed were; sociable, independent, confident, artistic, fashionable, serious, cautious, perfectionist, idealistic, reserved, critical, domineering, tactless, blunt, bossy, cynical scheming, dishonest, unpredictable, unfriendly, hostile, humourless and prejudiced.

The weakness in this method lies in the illustrator's ability to accurately communicate, in image form, the desired behavioural traits. Variability may also be introduced by the natural tendency of people to interpret the images in different ways. Finally, this method is relatively inflexible since the respondents are given no opportunity to move outside the highly restricted number of traits depicted in the images. It was for these reasons that the complete methodology comprised three dimensions which could be compared



Traits:	Like-ability score
Modest	150
Composed	134
Tidy	153
Systematic	217
Proficient	137
Total likeability score	791



Overcautious	315
Highly strung	349
Worrier	353
Nervous	367
Oversensitive	392
Total likeability score	1776



Impulsive	252
Aggressive	253
Boisterous	412
Untidy	397
Rude	538
Total likeability score	1852

Note: Respondents were exposed to images only and not given information about the traits portrayed within them.

and cross-referenced to produce the most reliable picture of stereotypes between the range of occupational groups investigated.

The second dimension

The second dimension of the research method involved asking a range of occupational groups to give five keywords which most closely reflected their perception of each other. It was a method used by Glick *et al.* (1995) in their study of gender and status in occupational stereotypes and it provided respondents with complete freedom to generate their own keywords. These were then compared with Anderson's ranked list of 550 personality traits to arrive at a likeability score. If the words provided by respondents did not figure within Anderson's model, then synonyms were sought from Roget's Thesaurus to identify the closest listed word to that provided by respondents.

The third dimension

The third dimension of the research method involved respondents choosing five words from a preconceived list of traits selected from the 550 ranked by Anderson. In light of the impracticability of presenting all 550 traits to respondents, the full list was split into ten equal portions from each of which, five traits were selected. This resulted in a full range of 50 traits ranging from high to low like-ability from which respondents could choose. Once again, the derivation of the traits from Anderson's model enabled a like-ability scoring system to be used.

Analysis and discussion of results

Each dimension of the research method was applied to a sample of 100 (25 quantity surveyors, 25 engineers, 25 architects and 25 site managers). The response rates from the three dimensions were 38%, 31% and 57% respectively and the results were combined into one overall 'trait analysis' and presented in tabular format for each relationship between the four occupational groups investigated. For example, Table 1 depicts the words which were used by architect's to describe their perceived personality traits of other occupational groups in the sample.

In Table 1, the frequency of each trait is provided and multiplied by Anderson's likeability ranking to obtain 'total points' which are then summed to provide a 'grand total'. To enable comparison with perceived traits in other relationships, a mean score can be calculated and finally, to give a comparative indication of stereotype strength, a standard deviation of scores is

Figure 1 Typical images and likeability scores

Table 1 Descriptive data – architects' perceptions of other occupational groups^a

Points (likeability ranking)	Words	Engineers		Quantity surveyors		Main contractors	
		Frequency	Total points	Frequency	Total points	Frequency	Total points
2	Honest	3	6	3	6	1	2
7	Intelligent	6	42	8	56	2	14
26	Honourable	0	0	1	26	0	0
28	Responsible	5	140	8	224	3	84
45	Helpful	0	0	0	0	1	45
47	Imaginative	2	94	0	0	1	47
52	Level-headed	4	208	6	312	3	156
59	Ambitious	2	118	0	0	4	236
62	Efficient	3	186	3	186	3	186
258	Unpredictable	0	0	2	516	1	258
260	Blunt	2	520	2	520	3	780
268	Authoritative	1	268	0	0	0	0
283	Cunning	0	0	3	849	4	1132
305	Critical	5	1525	3	915	5	1525
315	Over-cautious	5	1525	7	2205	0	0
319	Argumentative	0	0	1	319	0	0
326	Introverted	1	326	0	0	0	0
349	Highly strung	1	349	2	698	0	0
512	Inflexible	0	0	0	0	1	512
514	Mundane	0	0	1	514	0	0
516	Pedantic	0	0	1	516	0	0
522	Unfriendly	4	2088	3	1566	2	1044
523	Hostile	4	2092	3	1569	2	1046
531	Loud-mouthed	0	0	1	531	0	0
538	Rude	3	1614	1	538	6	3228
540	Greedy	0	0	0	0	1	540
551	Dishonest	0	0	3	1653	1	551
Grand total		193	47784	176	42900	163	42682
Mean			248 (45%)		244 (44%)		262 (47%)
Standard deviation			157 (28%)		157 (28%)		148 (27%)

^a This is a representative part of the original table. The grand total, mean and standard deviation are for the complete table.

also provided (the lower the standard deviation the stronger the stereotype held). These figures can then be expressed as percentages of 555, a high mean percentage indicating low like-ability and a high standard deviation percentage indicating weak stereotypes. Finally, while means and standard deviations are useful in indicating the *strength* and *likeability* of stereotypes between two occupational groups, an understanding of their *nature* is best gained by analysing the words used to describe them. However, as is illustrated in Table 1, the range of words used prevents sensible analysis and for this reason, it is more useful to focus upon the five most commonly used words used to describe each occupational relationship. All of this data relating to the relationships between the range of occupational groups investigated in this study are provided in Table 2.

On an overall basis, the mean standard deviation for all relationships of 143 (26%) indicates relatively strongly held stereotyped views between the occupational groups investigated and the likeability score of 237 (43%) indicates that they are slightly positive. In more specific terms, the strongest stereotypes of other occupational groups are *held by* quantity surveyors (sd = 134 (24%)), then by engineers (136 (25%)), then by contractors (147 (26%)) and then by architects (154 (28%)). However, the differences between the strength of stereotypes held by the different occupational groups is not significant. The same can be said for occupational groups that are *subject to* the strongest stereotypes, the strongest being the quantity surveyor (sd = 141 (25%)), the next being the engineer and contractor (143 (26%)) and the weakest being the architect (145 (26%)). In terms of who is liked the

Table 2 Data relating to stereotype perceptions between all occupational groups

		From				
		Architect	Engineer	Quantity surveyor	Contractor	Averages
To	Architect		Artistic, imaginative, independent, confident, sociable <i>N</i> = 172 Mean – 222 (40%) Std. dev. – 144 (26%)	Artistic, confident, independent, imaginative, idealistic <i>N</i> = 163 Mean – 226 (41%) Std. dev. – 139 (25%)	Artistic, fashionable, confident, imaginative, independent <i>N</i> = 199 Mean – 259 (47%) Std. dev. – 153 (28%)	<i>N</i> = 178 Mean – 236 (43%) Std. dev. – 145 (26%)
	Engineer	Systematic, proficient, cautious, confident, serious. <i>N</i> = 193 Mean – 248 (45%) Std. dev. – 157 (28%)		Proficient, systematic, cautious, composed, intelligent. <i>N</i> = 139 Mean – 192 (35%) Std. dev. – 126 (23%)	Systematic, cautious, composed, proficient, perfectionist. <i>N</i> = 202 Mean – 238 (43%) Std. dev. – 145 (26%)	<i>N</i> = 178 Mean – 226 (41%) Std. dev. – 143 (26%)
	Quantity surveyor	Systematic, cautious, intelligent, responsive, modest. <i>N</i> = 176 Mean – 244 (44%) Std. dev. – 157 (28%)	Proficient, systematic, composed, modest, tidy. <i>N</i> = 143 Mean – 195 (35%) Std. dev. – 123 (22%)		Cautious, systematic, proficient, modest, tidy. <i>N</i> = 158 Mean – 260 (47%) Std. dev. – 143 (26%)	<i>N</i> = 159 Mean – 233 (42%) Std. dev. – 141 (25%)
	Contractor	Aggressive, confident. sociable, untidy, rude. <i>N</i> = 163 Mean – 262 (47%) Std. dev. – 148 (27%)	Aggressive, confident, systematic, blunt, critical <i>N</i> = 126 Mean – 246 (44%) Std. dev. – 142 (26%)	Aggressive, sociable, systematic, confident, rude. <i>N</i> = 124 Mean – 249 (45%) Std. dev. – 138 (25%)		<i>N</i> = 138 Mean – 252 (45%) Std. dev. – 143 (26%)
	Averages	<i>N</i> = 166 Mean – 251 (45%) Std. dev. – 154 (28%)	<i>N</i> = 147 Mean – 221 (40%) Std. dev. – 136 (25%)	<i>N</i> = 142 Mean – 222 (40%) Std/ dev. – 134 (24%)	<i>N</i> = 186 Mean – 252 (45%) Std. dev. – 147 (26%)	<i>N</i> = 237 Mean – 237 (43%) Std. dev. – 143 (26%)

most by others, the engineer (226 (41%)) is most popular first, the quantity surveyor (233 (42%)) second, the architect (236 (43%)) third and the contractor (252 (45%)) least popular. In this sense, it is not surprising to find that in terms of liking others, the order is the same.

At the level of individual relationships between specific occupational groups, Table 3 ranks, from top to bottom, the strength and like-ability of stereotypes. It indicates that the quantity surveyor is most strongly and widely associated with stereotypes in

both a receiving and sending capacity. In terms of the likeability of the stereotypes held, the contractor has the basis of the poorest relationships with most project participants. This is particularly true of the contractor's relationships with the architect (average 47%) and quantity surveyor (46%). The basis of relatively poor relationships also exist between the architect and engineer (42.5%) and architect and quantity surveyor (43%) but the basis of the strongest relationship exists between the quantity surveyor and the engineer (35.5%).

Table 3 Ranked stereotype strengths and likeability scores between different occupational groups

	Stereotype strength	Level of likeability
H	Engineer of quantity surveyor (123 (22%))	Quantity surveyor of engineer (192 (36%))
i	Quantity surveyor of engineer (126 (23%))	Engineer of quantity surveyor (195 (35%))
G	Quantity surveyor of contractor (138 (25%))	Engineer of architect (222 (40%))
h	Quantity surveyor of architect (139 (25%))	Quantity surveyor of architect (226 (41%))
.	Engineer of contractor (142 (26%))	Contractor of engineer (238 (43%))
.	Contractor of quantity surveyor (143 (26%))	Architect of quantity surveyor (244 (44%))
.	Engineer of architect (144 (26%))	Engineer of contractor (246 (44%))
.	Contractor of engineer (145 (26%))	Architect of engineer (248 (45%))
.	Architect of contractor (148 (27%))	Quantity surveyor of contractor (249 (45%))
L	Contractor of architect (153 (28%))	Contractor of architect (259 (47%))
o	Architect of engineer (157 (29%))	Contractor of quantity surveyor (260 (47%))
w	Architect of quantity surveyor (157 (29%))	Architect of contractor (262 (47%))

Conclusions, recommendations and further research

This paper has investigated the stereotype perceptions which exist between different occupational groups within the construction industry. It has not identified their validity, their influence upon people's behaviour, the mental processes which shape them nor their contextual dynamics. For example, during a conflict, the aggressive dimension of the contractor stereotype may become more prominent, making the image more negative and possibly having an important effect upon bargaining tactics. Further research is needed in these areas.

Within the above constraints, the results indicate that relatively strong stereotypes exist between the occupational groups which contribute to construction projects, although their relative strength varies between different groups. Although the importance of 'likeability' levels between project members, in terms of determining project performance is unknown, the results also indicate that these stereotypes are generally positive in nature. This is not supportive of the contemporary view, espoused by much construction management literature, that conflict is institutionalized within the construction industry. However, the stereotypes are not strongly positive and there is little cause for complacency since their potentially positive effect could be destroyed easily by insensitive managerial practices. Indeed, in light of the underlying positiveness of perceptions which appear to exist between different occupational groups, it would seem that such practices may be responsible for the confrontational relationships which appear to characterize many construction projects. The picture which emerges from this research is of construction project participants being forced, by insensitive managerial practices, to work in an interpersonal environment which is uncomfortable to them.

The results also indicate that there are certain relationships which have the potential to be more problematical than others. In particular, the contractor's relationship with the architect and quantity surveyor would appear to be especially problematical because stereotypes held between these occupations are relatively strong and negative. Since this research has not investigated the influence that these stereotypes have upon behaviour within construction projects, main-stream research suggests an influence which only can be speculated upon. For example, it is probable that if contractors are perceived to be aggressive and blunt, that their relationships with others will be confrontational and defensive in nature. While more research is needed to investigate such relationships, the results provide new insights into the perceptions and expectations which exist between different occupational groups in the construction industry. This should enable construction project managers to better manage the problematical communications and interpersonal relationships which represent a significant source of potential conflict within their projects. Social psychologists have shown how the habitual prejudices which arise from stereotypes can be broken, albeit with some difficulty. This involves changing a life-time of socialization and experiences and can be achieved only by exposing people to their stereotypes and prejudicial behaviour and by showing them how to modify their behaviour in a non-prejudicial fashion. The time-consuming nature of this process means that the professional institutions, the educational sector and the government have an important role to play. In particular, significant contributions can be made by popular reports such as Latham (1994) which seek to highlight the biased and confrontational impact of the interpersonal behaviour which characterizes the construction industry. Contemporary attitudinal research indicates that the reciprocal relationship between beliefs, attitudes and behaviour could enable relatively small changes in the construction industry's attitudinal base to produce disproportionately

dramatic results by initiating a self-perpetuating cycle of positive behaviour which would gain its own momentum. The challenge to the construction industry is to initiate this cycle.

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