DYSLEXIA
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Dyslexic Entrepreneurs: The Incidence; Their Coping Strategies and Their Business Skills

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This comparative study explores the incidence of dyslexia in entrepreneurs, corporate managers and the general population. It examines the suggestion that dyslexic entrepreneurs develop coping strategies to manage their weaknesses, which are subsequently of benefit in the new venture creation process. Results of this study suggest that there is a significantly higher incidence of dyslexia in entrepreneurs than in the corporate management and general US and UK populations and some of the strategies they adopt to overcome dyslexia (such as delegation of tasks) may be useful in business. The study was undertaken in two parts. First, entrepreneurs and corporate managers completed an online questionnaire, which combined questions about their company, their management or leadership role and their business skills together with questions that were designed to explore the likely incidence of dyslexia. A follow-up study that made use of a semi-structured questionnaire explored business issues and educational experience in more depth with those who had been diagnosed as dyslexic and those who did not have any history of dyslexia or any other learning difficulty.

Keywords: dyslexia; entrepreneurship; education; compensatory skills

OBJECTIVE OF STUDY

Many entrepreneurs[†] claim to be dyslexic.[‡] These include Richard Branson and Charles Schwab (Morris, 2002). They have suggested that being dyslexic has helped them succeed but education has failed

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them. Furthermore, anecdotal evidence suggests there is a high incidence of dyslexia in entrepreneurs. Initial research in the UK supported this (Logan, 2001). In addition, research with dyslexic adults suggests that those who successfully overcome their difficulties develop coping strategies that may also be useful in business (Everatt, Steffert, & Smythe, 1999).

This research compared the incidence of dyslexia in two population groups: entrepreneurs and corporate managers in the US, examined the suggestion that dyslexics have developed coping strategies that subsequently provide an advantage in business and explored the entrepreneur's early years and educational experience. This study was then compared with a previous study using the same methodology and types of respondents: entrepreneurs and corporate managers, which was carried out in the UK (Logan, 2001). Corporate managers were chosen as a comparative group because entrepreneurship research suggests that while they share some characteristics with entrepreneurs including a high need for achievement (McClelland, 1967) and vision (Timmons, 1999), they do not usually possess all of the characteristics and attitudes that are commonly seen in entrepreneurs including the need for autonomy (Gatewood, Shaver, & Gartner, 1995; Watkins, 1976), the increased locus of control (Jennings, Cox, & Cooper, 1994; Joe, 1971; Rotter, 1966) and the propensity for risk taking (Caird, 1991; Stewart & Roth, 2001; Timmons, 1999).

Furthermore, research by Fitzgibbon and O'Connor (2002) suggest that the corporate environment is not conducive to dyslexics and thus there is likely to be less of them.

METHODOLOGY

The research was completed in two phases. First, an initial screening questionnaire was devised to be sent to all the participants. This questionnaire had three objectives: to compare the incidence of dyslexia in entrepreneurs and corporate managers, to explore their business activities and backgrounds and lastly to investigate the existence of attributes that may be associated with entrepreneurship such as propensity for risk taking.

A second follow-up questionnaire examined family and educational backgrounds, their entrepreneurial and management experiences and perceptions of their entrepreneurial and business attributes.

First Study

The initial questionnaire that was designed for both the corporate managers and the entrepreneurs comprised three main sections. The first section focused on company details and their role within the company, and the second included questions relating to their education and attributes (they were asked to rate their attributes using a five-point Likert scale). The third section incorporated a series of 'Yes/No' questions from 'A Revised Adult Dyslexia Checklist' (Vinegrad, 1994) to identify which respondents in the study displayed signs of dyslexia.

'The Adult Dyslexia Checklist' was chosen because while it is not an ideal tool (the questions only indicate possible dyslexia) it is one of the few ways of testing

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large numbers for an initial study. Furthermore, while adults who are not dyslexic may exhibit some of the weaknesses listed as part of the 'Adult Dyslexia Checklist', certain questions within the test point to dyslexia rather than problems such as memory loss due to aging. A decision was made after exploring the dyslexia literature and undertaking the initial pilot with dyslexics and non-dyslexics that in order to be classed as dyslexic, respondents must report difficulty with spelling and pronunciation of long words: questions relating to taking down and passing on messages or sequencing plus at least two other areas. Miles (1993) identifies spelling as a key problem for dyslexics and suggests that this continues into adulthood. Riddick, Farmer, and Sterling (1997) support this view. Miles also found that over 90% of dyslexics struggle with sequencing and 66% of dyslexics have problems reading and pronouncing polysyllabic words.

The questionnaire was piloted with a control group of 35 accountants prior to the commencement of the UK study. The accountants were chosen because they were studying for an MBA, their assignments showed no sign of any spelling or grammatical difficulties and when questioned individually they had not experienced any learning difficulties. When the test was administered to the accountants they did not show dyslexic traits. Some had answered that they took longer to read books but none had problems with spelling pronunciation, sequencing mixing up appointments or message taking. This suggested that the Adult Dyslexia Checklist would be a suitable tool for an initial study. The test was also piloted with 10 dyslexic students to ensure that it worked.

The Academy for Entrepreneurial Leadership at the University of Illinois provided contact details for entrepreneurs and the Kauffman Foundation's business and financial database provided the contact details of entrepreneurs and corporate managers. The database also included details concerning company size and their financial status. A mail or email correspondence was sent to 2000 potential participants explaining that the research was investigating characteristics of corporate managers and entrepreneurs and asked them to complete the questionnaire. A total of 102 entrepreneurs and 37 corporate managers responded; this was a response rate of 7.0%. Each key variable was analysed to reveal any differences between the two groups: dyslexic entrepreneurs and non-dyslexic entrepreneurs. A comparative group of corporate managers was included in the analysis to compare the incidence of dyslexia.

The study replicated the UK study (Logan, 2001) completely so that comparisons could be drawn; however, the UK study used business directories as the sample frame. Questionnaires were sent to 500 managers and 215 respondents completed the UK study: 99 entrepreneurs, 88 corporate managers and 28 who were too small to be considered entrepreneurs. This was a response rate of 43.0%.

The Follow-up Study

Thirty-six respondents took part in the US follow-up study. A semi-structured questionnaire was used to investigate the family background and the educational experience. Finally, candidates were asked to rate their business skills in a questionnaire. The questionnaire had a list of statements about their abilities and respondents were asked to respond using a five-point Likert scale: scoring ranging from one for very low ability to five for very high ability. These abilities

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included attention to detail, communication skills, problem-solving skills and processing information systematically.

Only those who had definitely been diagnosed as dyslexic were included in the dyslexic group for the follow-up study. One person in this group also reported having attention deficit hyperactive disorder (ADHD) but this was in addition to dyslexia. There are studies that suggest that some entrepreneurs have ADHD (including those by Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993) and this may be so. Certainly some dyslexics do report being ADHD but many do not. While those with ADHD alone may have experienced some of the problems that dyslexics face, they do not generally have the problems with spelling and pronunciation, which have led dyslexics to develop the coping strategies this study is examining.

RESULTS OF STUDY

Incidence of Dyslexia

The primary variable to represent these groups was a split between those who displayed dyslexic characteristics ($n = 36$) and those who did not ($n = 66$). The comparative group of corporate managers was included in the analysis. A description of the sample can be found in Table 1.

A further two variables representing the split were created Dys6 (six or more separate indicators were taken to represent a high level of dyslexia. For example, spelling, sequencing, pronunciation, reading, mixing times and appointments, confusing right and left and problems with learning tables) and Dys8 (a person with eight or more traits would be on the extreme end of the dyslexia scale). The same analysis was applied to these groups. Obviously, the sample size of dyslexic entrepreneurs was reduced significantly (Dys6: $n = 17$, Dys8: $n = 5$); however, where trends were found, it was interesting to explore whether they were more or less significant as the level of dyslexia increased.

The Scoring of the Questionnaire

Most candidates, dyslexic or otherwise, answered yes to the question: Do you take longer to read books than you should? On further investigation it seemed this was more a result of a busy lifestyle than dyslexia and therefore this question was excluded from the scoring.

Table 1. Sample composition

	Entrepreneur	Corporate manager	Total
Non-dyslexic	66	34	100
Dyslexic* 4 or more traits	36	3	39
Total	102	37	139

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The Dyslexic Group

Thirty-nine respondents experienced difficulty with spelling and pronunciation of long words and sequencing. Thirty-six had difficulty taking down and passing on messages. The other most common problems included learning tables and mixing up appointments. Some respondents had answered no to 'Do you muddle dates and times?' and 'Do you mix up dates and appointments?', but actually said they could not manage without their electronic diaries. They were included in the dyslexia 4 group but had they answered yes would have been in the dyslexia 6 group.

The Non-dyslexic Group

Thirty-five respondents did not report any problems on the checklist. Thirty-six candidates experienced difficulty with spelling but did not have any other problems. Twenty-seven respondents did not experience problems with spelling or pronunciation or taking down messages but reported problems with learning tables or remembering their right and left hands. Two candidates ticked the questions on difficulty with spelling, pronunciation and taking down messages, which would seem to be indicators of dyslexia but did not have any other problems. All of these candidates were grouped as non-dyslexic.

Incidence of Dyslexia in Entrepreneurs

As can be seen in Table 1 screening with the Adult Dyslexia test suggests that there is a much higher incidence of dyslexia in the entrepreneurs in this study than in the corporate management population. Thirty-five per cent of US entrepreneurs in this sample reported as having difficulty in at least four areas and 22% had difficulties with six or more areas. Less than 1% of corporate managers reported as dyslexic, this compares with a US national incidence of up to 15% (Morgan & Klein, 2000; Morris, 2002 (see footnote ‡)).

Business Attributes: Early Years and School Experience

Table 2 provides a summary of all the analyses performed and any relevant notes. All dependent variables were included in the analysis; however, the main body of the report focuses on those where trends were found. The analysis is split into three areas, examining variables relating to business aspects, personal attributes and early experiences.

Where the sample was large enough to run tests, either Chi-Square, Fisher's Exact test or Mann Whitney tests were used, depending on the nature of the dependent variables and relevant assumptions. The tests used and their *P* values are reported in Table 2, including marginal significance. Trends that were not significant are noted as n.s.

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Table 2. Summary of analysis

Areas of interest	Difference Dys4	Stat. sig.	Control group	Dys6, Dys8	Notes
Business aspects					
Industry	No pattern	—	—		Cleaned: new variable created
No. of staff to manage	Trend: +ve	$P<0.05$	No impact		Test: Mann Whitney
No. of years running company	Trend: −ve	$P<0.06$	n/a	6: $P<0.01$	Test: Mann Whitney
No. of years in position	No pattern	—	—		
Any other businesses	Trend: +ve	$P<0.01$	n/a	6: $P<0.05$	Test: Mann Whitney
Personal attributes					
Artistic ability	No pattern	—	—		
Self-confidence	No pattern	—	—		
Public speaking	No pattern	—	—		
Risk taking	Trend: +ve	n.s.	Trend		Test: Mann Whitney
Risk decreased over time	No pattern	—	—		
Communication skills	Trend	n.s.	Trend		$n=34$
Delegate	Trend	n.s.	Stronger trend		Test: Mann Whitney $n=36$
Early experiences					
School experience	Trend: −ve	n.s.	Trend		Not significant
Early years' influence	Trend	$P<0.05$			Test: Chi-Square

The Exploration of Business Aspects

Chosen Industry

No pattern emerged for the type of industry the entrepreneur had chosen. Both groups showed a preference for the service industries with manufacturing second and engineering third.

Number of Staff Managed

A clear pattern emerged: dyslexic entrepreneurs reported having more staff than non-dyslexic entrepreneurs (Figure 1). This was found to be statistically significant at the 95% confidence level (Mann Whitney test $P<0.05$).

The corporate sample was too small to see if it had a significant effect, as only three corporate managers were dyslexic. It would be useful to explore this further with a bigger sample size to determine if it is an effect found among dyslexic managers or just entrepreneurs, or reflecting another factor, such as type of industry.

Number of Years Running Company

Non-dyslexic entrepreneurs reported running their company for a longer period of time than the dyslexic entrepreneurs (Figure 2). This was found to be statistically significant at the 90% confidence level (Mann Whitney test $P<0.06$).

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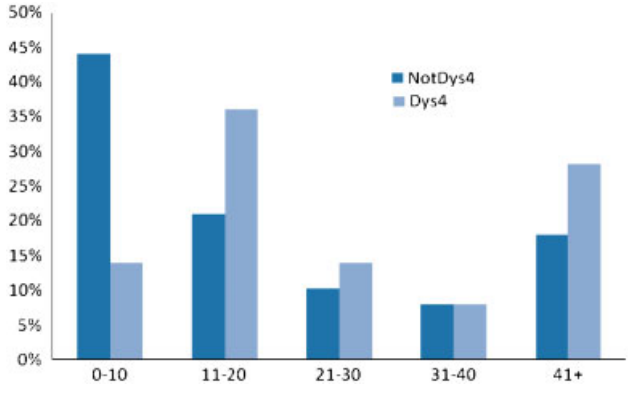

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
0-10	28	5	33	11	2	13
	44.4%	13.9%	33.3%	32.4%	66.7%	35.1%
11-20	13	13	26	10	0	10
	20.6%	36.1%	26.3%	29.4%	0.0%	27.0%
21-30	6	5	11	4	0	4
	9.5%	13.9%	11.1%	11.8%	0.0%	10.8%
31-40	5	3	8	2	0	2
	7.9%	8.3%	8.1%	5.9%	0.0%	5.4%
41+	11	10	21	7	1	8
	17.5%	27.8%	21.2%	20.6%	33.3%	21.6%
Total	63	36	99	34	3	37

Figure 1. Number of staff managed by entrepreneurs. $n = 99$.

When dyslexia was identified using six criteria, the effect was found to be significant at the 99% confidence level. This finding sits in contrast with the number of business held by dyslexic and non-dyslexic entrepreneurs.

In order to see the impact of the comparative group, a similar variable, time held in position, was analysed. The same effect was not found among corporate managers.

Owning Any Other Business

Although dyslexic entrepreneurs reported as less likely to have run their business for longer periods of time, more of them reported owning more than one business (Figure 3). This was found to be statistically significant at the 99% confidence level (Fisher's Exact test $P < 0.01$). When dyslexia was identified using six criteria, the effect was found to be significant at the 95% confidence level.

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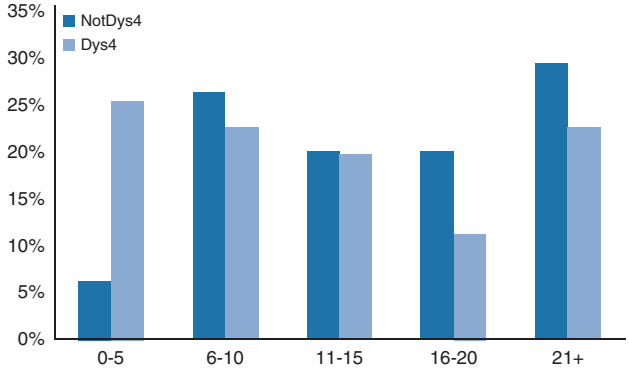

	Not Dys4	Dys4	Total
0-5	4	9	13
	6.1%	25.0%	12.7%
6-10	17	8	25
	25.8%	22.2%	24.5%
11-15	13	7	20
	19.7%	19.4%	19.6%
16-20	13	4	17
	19.7%	21.1%	16.7%
21+	19	8	27
	28.8%	22.2%	26.5%
Total	66	36	102

Figure 2. Length of time running company. $n = 102$.

Risk Taking

All entrepreneurs were likely to say that they had a high level of risk taking (Figure 4). Those who were dyslexic were slightly more likely to perceive their propensity for risk taking as higher than non-dyslexic entrepreneurs; however, this was not found to be statistically significant (trend: Mann Whitney test). With corporate managers included, this trend between dyslexic and non-dyslexic people is strengthened, and becomes significant at the 95% confidence level. Note that there was a very small sample of dyslexic corporate managers ($n = 3$), and at least one respondent had ADHD, which is also linked to risk taking and therefore the findings require further investigation with a larger sample.

When asked if their risk taking had decreased over time, there were no patterns found between dyslexic and non-dyslexics.

Self-confidence, Public Speaking, Artistic Ability and Sport Ability

No pattern emerged for any of these attributes.

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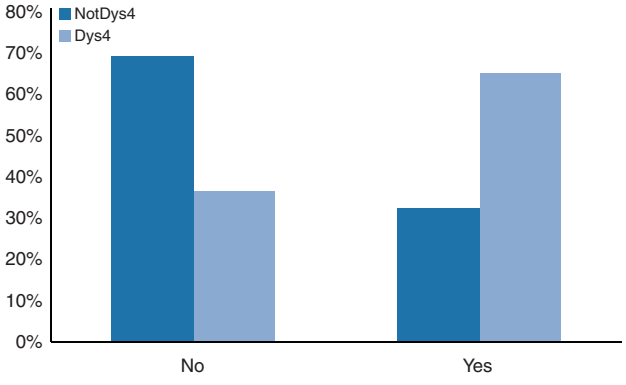

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
No other business	45	13	58	30	2	32
	68.2%	36.1%	56.9%	88.2%	66.7%	86.5%
Other Business	21	23	44	4	1	5
	31.8%	63.9%	43.1%	11.8%	33.3%	13.5%
Total	66	36	102	34	3	37

Figure 3. Run another business. $n = 102$.

School Experience

There was a small trend where dyslexics were less likely to have a positive school experience; however, this was slight and not found to be statistically significant (Figure 5). The trend held when the control group was added into the sample and, however, remained non-significant.

Early Years

Having a business in the family and the existence of an entrepreneurial role model was the most cited influence on career choice for entrepreneurs, closely followed by the existence of a mentor (Figure 6). Other specified influences were to do with specific events or general comments.

Non-dyslexic entrepreneurs are more likely to be influenced in their career choice by their education; indeed no dyslexic entrepreneurs identified education as an influence unless it was among a mix of influences.

Dyslexic entrepreneurs were more likely to be influenced by a role model within the family business than non-dyslexic entrepreneurs and more likely to be influenced by mentors (trend: Chi-Square test). Education was also found to be more likely to influence non-dyslexic corporate managers; however, due to the range of options available, the number of responses per category was too small to analyse.

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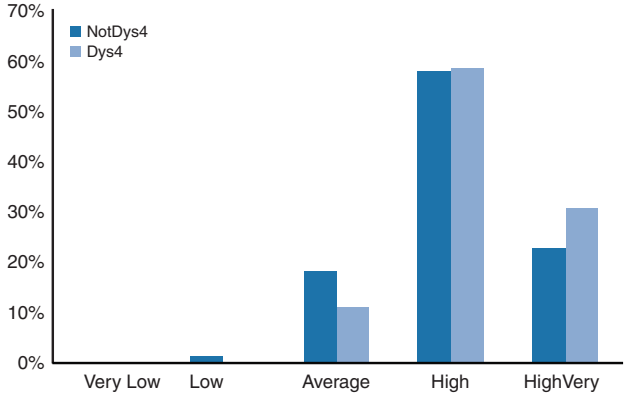

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
Very Low	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Low	1	0	1	2	0	2
	1.5%	0.0%	1.0%	5.9%	0.0%	5.4%
Average	12	4	16	11	0	11
	18.2%	11.1%	15.7%	32.4%	0.0%	29.7%
High	38	21	59	18	3	21
	57.6%	58.3%	57.8%	52.9%	100.0%	56.8%
Very High	15	11	26	3	0	3
	22.7%	30.6%	25.5%	8.8%	0.0%	8.1%
Total	66	36	102	34	3	37

Figure 4. Level of risk taking among entrepreneurs. $n = 102$.

Results of Second Subgroup Study

Communication Skills

This question had 34 responses (Figure 7). Nearly all respondents perceived their communication skills as 'average' or 'good', but dyslexic entrepreneurs were more likely to rate themselves as 'very good' than non-dyslexic entrepreneurs, a pattern that remained (although slightly weaker) with the corporate manager group included. With a larger sample, this effect could be statistically assessed.

Delegation

Dyslexic people were more likely to say that they were 'very good' at delegation than non-dyslexics, a pattern that remained with the corporate managers

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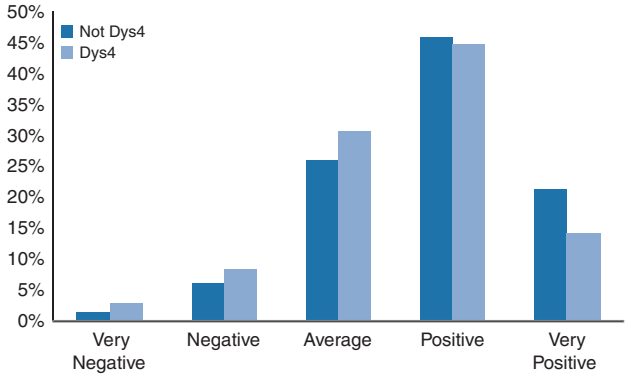

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
Very Negative	1	1	2	0	0	0
	1.5%	2.8%	2.0%	0.0%	0.0%	0.0%
Negative	4	3	7	3	0	3
	6.1%	8.3%	6.9%	8.8%	0.0%	8.1%
Average	17	11	28	4	0	4
	25.8%	30.6%	27.5%	11.8%	0.0%	10.8%
Positive	30	16	46	16	1	17
	45.5%	44.4%	45.1%	47.1%	33.3%	45.9%
Very Positive	14	5	19	11	2	13
	21.2%	13.9%	18.6%	32.4%	66.7%	35.1%
Total	66	36	102	34	3	37

Figure 5. School experience of entrepreneurs. $n = 102$.

included (marginally stronger). With a larger sample, this effect could be statistically assessed (Figure 8).

Semi-structured Questions with Individual Responses

A number of questions were asked for individual responses; these included questions not only about the success of the venture but also about school experience. In answer to the question 'what is the reason you have been success' two words meaning the same were stressed by all candidates dyslexic or otherwise: 'determination and perseverance'.

In answer to the question about achievement while at school: answered in a similar way by all dyslexic respondents; comments included:

> I had a difficult time in grade school…without the support of my family and a special program at school; I would not have completed high school. When I was 24 I started University…I did well, as I learned strategies and tricks on how to overcome my learning difficulties. F. B.

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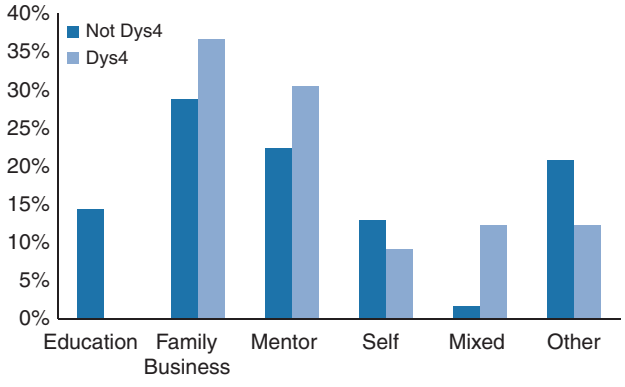

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
Education	9	0	9	15	0	15
	14.3%	0.0%	9.4%	45.5%	0.0%	41.7%
Family Business	18	12	30	8	1	9
	28.6%	36.4%	31.3%	24.2%	33.3%	25.0%
Mentor	14	10	24	6	2	8
	22.2%	30.3%	25.0%	18.2%	66.7%	22.2%
Self	8	3	11	2	0	2
	12.7%	9.1%	11.5%	6.1%	0.0%	5.6%
Mixed	1	4	5	0	0	0
	1.6%	12.1%	5.2%	0.0%	0.0%	0.0%
Other	13	4	17	2	0	2
	20.6%	12.1%	17.7%	6.1%	0.0%	5.6%
Total	63	33	96	33	3	36

Figure 6. Early influences of entrepreneurs. $n = 96$.

Yes I suppose school affected me. Made me feel I had something to prove. I was 20 years old before I could absorb what I had read. S. F.
The only benefit I feel I got from studying was the fact that I finished something, I can think of very few benefits that came from school for my day to day in the business. M. G.
It was not until University that I actually started to enjoy education. N. L.

DISCUSSION OF RESULTS

Response to the Questionnaire

The UK study (Logan, 2001) elicited a 43% response rate, while the US questionnaire elicited a 7.0% response rate. This was disappointing but may say

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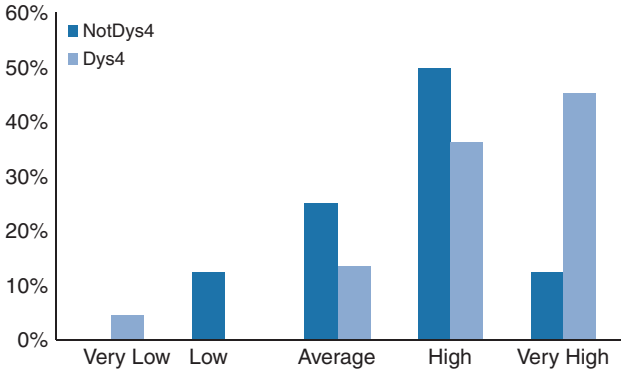

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
Very Low	0	1	1	0	0	0
	0.0%	4.5%	3.3%	0.0%	0.0%	0.0%
Low	1	0	1	0	0	0
	12.5%	0.0%	3.3%	0.0%	0.0%	0.0%
Average	2	3	5	0	0	0
	25.0%	13.6%	16.7%	0.0%	0.0%	0.0%
High	4	8	12	2	1	3
	50.0%	36.4%	40.0%	66.7%	100.0%	75.0%
Very High	1	10	11	1	0	1
	12.5%	45.5%	36.7%	33.3%	0.0%	25.0%
Total	8	22	30	3	1	4

Figure 7. Level of communication skills among entrepreneurs. $n = 30$.

something about the culture of the two countries. Both questionnaires had the logo of the university on them and the US questionnaire had the logo of both Cass Business School and the University of Illinois. It may be that the universities are respected in the UK and therefore people try to respond. It may also be that very few people in the US had heard of Cass Business School and therefore were not prepared to respond.

The Findings

Thirty-five per cent of US entrepreneurs in the initial study have dyslexic traits: 22% report as highly dyslexic or extremely dyslexic. Less than 1% of corporate managers reported as dyslexic, and this compares with a US national incidence of up to 15% (see note[§]: Morgan & Klein, 2000; Morris, 2002; International Dyslexia

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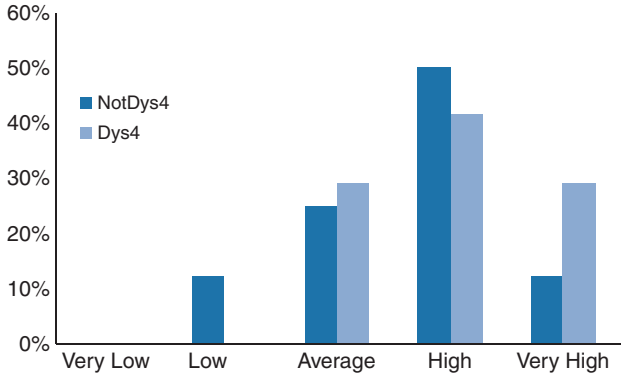

	Entrepreneurs			Corporate Managers		
	Not Dys4	Dys4	Total	Not Dys4	Dys4	Total
Very Low	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Low	1	0	1	1	0	1
	12.5%	0.0%	3.1%	33.3%	0.0%	25.0%
Average	2	7	9	2	0	2
	25.0%	29.2%	28.1%	66.7%	0.0%	50.0%
High	4	10	14	0	1	1
	50.0%	41.7%	43.8%	0.0%	100.0%	25.0%
Very High	1	7	8	0	0	0
	12.5%	29.2%	25.0%	0.0%	0.0%	0.0%
Total	8	24	32	3	1	4

Figure 8. Delegation among entrepreneurs. $n = 32$.

Association). The incidence of corporate managers with dyslexia seems to be very low. This raises questions about whether the corporate environment is conducive for dyslexics (Fitzgibbon & O'Connor, 2002) and whether there are barriers that prevent dyslexics reaching management levels within these organizations.

The incidence of dyslexia in US entrepreneurs is higher than that of the UK with 19% of UK entrepreneurs and 3% of UK corporate managers reporting as dyslexic (Logan, 2001). There are a number of possible explanations for the difference between the incidence in the UK and the US: first, the UK survey was not an online survey, which is easier to complete. Dyslexics dislike completing forms and therefore this may account for the lower incidence. Second, the identification, intervention and support for those with dyslexia in the UK started later than in the US and is still failing students. In a recent study of reading and spelling impaired undergraduates, Hanley (1997) found that the majority of students had not been identified as dyslexic at school. Those in the UK study

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(Logan, 2001) reported a lack of identification and support while at school, a negative school experience and lower levels of self-confidence in contrast to those in the US study. Lack of confidence, fear of failure and low esteem would possibly prevent a person considering entrepreneurship as a career option.

Non-dyslexic entrepreneurs had run their companies for longer than those who were dyslexic. This was found to be statistically significant at the 90% confidence level ($P = 0.056$). When dyslexia was identified using six criteria, the effect was found to be significant at the 99% confidence level. In contrast, dyslexics had started and owned more ventures than non-dyslexics. This was also statistically significant at the 99% confidence level.

Non-dyslexic entrepreneurs may stay with their existing company longer because they are comfortable with the structure that develops as a company matures. Dyslexics find it very stressful to cope in a structured company environment and are more comfortable managing a situation in which they can control the variables and therefore may prefer to focus their energies on the start-up phase (Fitzgibbon & O'Connor, 2002; Taylor & Walter, 2003).

Dyslexics employed more staff than non-dyslexics and this too was statistically significant at the 95% confidence level. The mean number of staff employed was 17 for non-dyslexics and 25 for dyslexics. If the number of staff employed is taken as a measure of company size and turnover, this together with evidence that suggests that dyslexics have been running their companies for less time, and may have more than one company, may suggest that dyslexics are able to grow their companies more quickly. This may also be linked to the trend reported in this study that dyslexics are more able to delegate. This ability to delegate is an example of the 'coping strategies' dyslexics employ to overcome their difficulties (Everatt *et al.*, 1999).

Fitzgibbon and O'Connor (2002) suggest that successful dyslexics develop ways of controlling, coping and compensating for their deficits. These strategies may become transferable skills, giving them an edge in business. For example, some dyslexics in this study reported learning at an early age to ask others to carry out the tasks they found difficult. One entrepreneur who was captain of the netball team used to ask another team member to write the names of those selected to play each week because she found spelling names impossible and wished to hide this weakness. Having learnt at an early age to trust others with tasks the dyslexic entrepreneur may find it easier to delegate leaving more time to focus on growing the business.

Delegation is essential for business growth; however, it is a skill that may need to be learnt; many entrepreneurs find it difficult to make the transition from control to delegation (Mazzarol, 2003; Timmons, 1999) and therefore this is a potentially interesting finding. There could be value from an investment prospective in knowing whether the person before you is likely to be able to delegate and grow a company quickly, particularly if an early exit is required.

While all entrepreneurs perceived themselves to have high levels of risk taking, more dyslexic entrepreneurs reported as very high on the risk taking scale. One entrepreneur who had been diagnosed as having dyslexia also reported having ADHD, which has been linked with propensity for risk taking in entrepreneurs, and therefore we cannot be sure that dyslexia is a causal factor. Investigation with a larger sample of respondents including those with ADHD but not dyslexia and dyslexia but not ADHD would be required to examine the relationship.

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There was a trend for dyslexics to perceive themselves as being better at communication than their non-dyslexic counterparts. This is not surprising because dyslexia literature suggests that dyslexics compensate for their lack of written skills by developing enhanced communication skills (Nicolson & Fawcett, 1999). Communication skills are an essential business tool. Those who can communicate well can inspire those around them to achieve a vision; they can network to build resources around an opportunity and motivate others to act; therefore, having enhanced communication skills would provide an entrepreneur or a manager with a definite business advantage.

Dyslexic entrepreneurs in both studies reported under-achievement at school, university or college; the UK study found this also to be true for many non-dyslexic entrepreneurs. In contrast to the UK study (Logan, 2001), dyslexic entrepreneurs had good levels of self-confidence. There was no difference in perceptions of self-confidence levels when compared with non-dyslexic entrepreneurs. Despite under-achievement, many perceived school as a positive experience. The reason for this may be linked to early identification and remediation in the US, which has until relatively recently not been the case in the UK. As already mentioned, this lack of intervention in the UK and the resulting consequences may be the reason for the difference in the incidence of dyslexia in the UK and US entrepreneurship populations.

The role of a mentor was identified as being a key factor in the decision to embark on an entrepreneurial career for the dyslexic. Does this suggest that those dyslexics who had a mentor had gone on to succeed? Morris (2002) discusses the role of mentoring:

> It was the kind of coaching that proved crucial to nearly everybody we talked to: mentors who took a genuine interest, parents who refused to give up, tutors who didn't even know what dyslexia was.

The survey found that the family business was a key influence for the dyslexic in the decision to create a new venture. This might suggest that those who were less successful at school were channelled into the family business. However, this does not seem to be the case: academic achievement of the two groups of entrepreneurs, dyslexic and non-dyslexic, was similar and therefore one would have thought that the family business would have a comparable impact on both groups but more dyslexics cited it as an influence. However, the role model (often the father) seems to be the key. It is very possible that the fathers of the dyslexics in this study (who were successfully running family businesses) were also dyslexic (it is hereditary) and therefore proved to be very powerful role models.

LIMITATIONS OF RESEARCH

The Adult Dyslexia Checklist is not the most rigorous test for dyslexia but a number of respondents in the initial study provide a clear indication that there is a significantly higher incidence of dyslexia in the entrepreneurs than in similar successful corporate managers. The follow-up study is very small and at this stage a pilot study is only indicative. There are some interesting trends that as yet are not 'significant', but these need to be investigated with a larger sample.

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Further investigations should aim to identify those with dyslexia, those with ADHD or other learning difficulties and those with neither. The response rate for the US questionnaire was disappointing and this meant that the sample size was small. This is particularly the case for the second study. This means that there has not been enough data to analyse the statistical significance for some of the questions. Finally, the second study reported the respondent's perceptions of their abilities and therefore the results are subjective. The study would be more rigorous if the respondent's perceptions could be confirmed by a third party.

CONCLUSION

There is a much higher incidence of dyslexia in entrepreneurs than in the normal corporate management population in the US and the UK. The incidence of dyslexia in entrepreneurs is also much higher than the incidence in the population in general. The research findings suggest that dyslexic entrepreneurs may be more comfortable in a start-up or a serial entrepreneurial role so that they are able to do things in their own way. It may also be that the corporate management environment is not conducive to dyslexics or that there are barriers that prevent dyslexics from achieving corporate management roles. This could be an area for a further large-scale study.

Dyslexics seem to grow their companies more quickly than non-dyslexics and this may be a consequence of their perceived ability to delegate. This ability is possibly a compensatory strategy. The ability to delegate is an essential strength for any manager and is one of the main barriers to business growth and therefore expertise in this area would provide an entrepreneur or a manager with an advantage. The dyslexics in this study were very good at oral communication; this coping strategy is also essential if the entrepreneur is to harness the necessary resources behind his vision and build a successful company.

Recommendations for those researching dyslexia include the need to examine the role of the mentor. It may be a crucial factor in encouraging the dyslexic to overcome difficulties, develop coping strategies and subsequent self-belief, all of which are essential if one is to succeed in life (Morgan & Klein, 2000). The influence of the role model also seems to be of significance and this is an area for further investigation.

The UK study (Logan, 2001) found a difference in the confidence levels of dyslexic and non-dyslexic entrepreneurs; this difference was not present in the US study. This may be because there is more intervention and support available. There is an urgent need for comprehensive methods of intervention and remediation, particularly in the UK. This is particularly essential if as suggested school curriculum is becoming geared left brain learning and weeding out some of our most innovative people (Frey, 1990).

Finally, it needs to be said that we should proceed with caution. The US and the UK studies (Logan, 2001) found a significantly higher incidence of dyslexia in entrepreneurs than in corporate managers; both studies suggest that dyslexic entrepreneurs may have developed coping strategies to compensate for their dyslexia and these are useful in the business environment. The studies also suggest that role models and mentors play a significant role in encouraging success, but can we say anymore than this? Entrepreneurship has been linked

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with ADHD. There is also a suggestion that those who have dyslexia frequently have ADHD and therefore we cannot be sure that it is dyslexia rather than ADHD that is responsible for the behaviour that influences entrepreneurial success. This study could be repeated with larger numbers of respondents using a selection of tests to identify those who have dyslexia and/or ADHD and those who have other learning difficulties. The extent of their direct influence on entrepreneurial behaviour could then be evaluated more fully. In this way these tentative findings could be confirmed.

NOTE

†. Dyslexia—difficulty with organisation, learning, working memory, Parker C. (1998). *British Dyslexia Association handbook*. Reading.

‡. There is a fundamental difference between owner managers and entrepreneurs. Bolton and Thompson suggest that one may differentiate entrepreneurs from owner managers very simply, on the basis that if owner managers of small businesses were really entrepreneurial, the businesses would not remain small for long. Bolton and Thompson's definition of the entrepreneur has been adopted for this paper because the second study examines the attributes of those who have successfully grown their companies. Bolton, B., & Thompson, J. (2000). *Entrepreneurs*: *Talent*, *temperament*, *technique*. Heinemann Butterworth.

§. National incidence dyslexia US/UK—10% (International Dyslexia Association, http://www.interdys.org, accessed: 1 June 2007)/(Parker, C. (1998). *British Dyslexia Association handbook.* Reading).

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