



Understanding Dyslexia

by

Dr Ian Smythe

2 April 2013

© Ian Smythe 2013

Dyslang Module 06

Version 0.050113

Assessing strengths and weaknesses

Copyright Ian Smythe 2012.
Cover illustration copyright Euroface Consulting 2012.
All other illustrations copyright Ian Smythe 2012.

Fair usage

This work is available under Creative Commons Attribution-NonCommercial 3.0 Unported (See <http://creativecommons.org/licenses/by-nc/3.0/>)



This means that the author allows the work to be shared, copied and distributed as well as remixed and adapted provided the following are respected:

Specific attribution: This author permits adaptation to local contexts provided the original author and material are acknowledged, and it is clear where the original unmodified version may be found. It should also be clear that the original author may not endorse the derived version.

Non commercial use: This work is restricted to non-commercial use. However, it may be incorporated into commercial contexts, e.g. workshops or online courses, provided it is clear that this material may be obtained freely, and where it may be obtained.

The **Original copy** may be found at www.dotr.im/dyslang06original

For other uses, please contact the author
Dr Ian Smythe - ianssmythe@gmail.com

This publication was produced by Dr Ian Smythe on behalf of the University of Wales Newport as part of an EU funded project, DysLang (www.dyslang.eu)

This project has been funded with support from the European Commission. This book reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Acknowledgments

Many people (project partners, teachers, tutors, researchers and dyslexic individuals) from many countries have contributed to the development of this module over a long period of time, for which I am very grateful.

Disclaimer

The views reflected in the original version of this Module are those of the author, Dr Ian Smythe, and may not reflect the views of the University of Wales Newport who cannot be held responsible for any use which may be made of the information contained therein.

Contents

Introduction

Checklist

The purpose of a definition

The definition

The definition – Alternatives

Explaining differences

The percentage of dyslexia?

Gender bias

Dyslexia is more than a reading and writing difficulty

Talents, Creativity and dyslexia

Famous dyslexics

Comorbidity - 0.5

Learning Objectives

The purpose of this module is to provide a basic understanding of what is dyslexia, and some of the discussion points around it.

This will set the scene for the following modules, and allow individuals to contextualise to the wider discussions.

Every attempt has been made to make it accessible to the reader, with links to additional online resources being provided where appropriate.

Links

Introduction

It does not matter if you are dyslexic, if you supervise a dyslexic individual, you support them, or they are a family member or friend, before you read the rest of this module, try the questionnaire below. This is a simplified version of a standard adult dyslexia questionnaire, the full version of which you will find online if you follow the links at the bottom of this page.

Key Points

Dyslexia is about more than reading and writing difficulties.

1. Do you confuse visually similar words such as cat and cot?
2. Do you lose your place or miss out lines when reading?
3. Do you confuse the names of objects, for example, table for chair?
4. Do you have trouble telling left from right?
5. Is map reading or finding your way to a strange place confusing?
6. Do you re-read paragraphs to understand them?
7. Do you get confused when given several instructions at once?
8. Do you make mistakes when taking down telephone messages?
9. Do you find it difficult to find the right word to say?
10. How often do you think of creative solutions to problems?
11. How easy do you find it to sound out words such as e-le-phant?
12. When writing, do you find it difficult to organise thoughts on paper?
13. Did you learn your multiplication tables easily?
14. How easy do you find it to recite the alphabet?
15. How hard do you find it to read aloud?

The purpose of reading those questions was to highlight that dyslexia is not just about reading and writing. It affects all parts of ones life. So even if you are in a job that does not involve, for example, writing reports, it does not mean that you will not have problems with dyslexia.

If dyslexia was a problem at school, then despite all the strategies that may have developed, that dyslexia is still around. The good news is that while it still remains, it can often be harnessed as an asset.

It is a lifelong issue.

There are often strengths that can be utilised.

Links

Checklist – www.dotr.im/dysvet0101

Radio broadcast – www.dotrim.im/dysvet0102

Purpose of a definition

If we are to understand why there is a lack of agreement on the definition, we need to understand why this happens. The main reason is that there is no authority that everybody turns to. At best, they are usually government review boards that look for consensus. But then where does that consensus come from. And it, in turn, must be biased, since that board can decide who to ask, and whose definition is accepted.

Robinson (1950) suggests the reasons to provide a definition include not only how a word should be used, but also provide a set of conditions in which something occurs.

With reference to dyslexia, Miles (1995) wrote that definitions should:

giving a guide to diagnosis
 finding a watertight legal description that will automatically give entitlement to special help or provision
 showing off one's pet theory and trying to impose it on others.

Unfortunately these are, at best, optimistic since a pragmatic guide to diagnosis is nothing but a guide without cut-off meaningful criteria, which are not included in the definitions.

Definitions are a balancing act of try to match the single word with the collection of words that form the definition.

Dyslexia

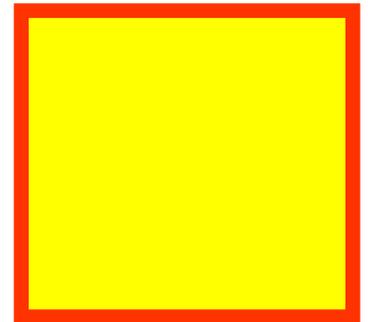
?



Classical concepts: What is a square?

A square maybe be defined as

- 1) Having four sides
- 2) The sides are of equal length
- 3) The sides are joined at right angles.
- 4) It is closed.



If an object has those four characteristics is a square.

And if you call something a square, it must have those characteristics.

For dyslexia, it is not so easy to balance the two sides, since it is more closely related to "family resemblances" than clearly definable criteria.

Links

For a more in depth discussion, try an internet search using the term *Paradoxes in the Definition of Dyslexia*

The definition

Dyslexia is a difficulty in the acquisition of fluent and accurate reading, spelling and writing skills, that is neurological in origin.

This may be caused by a number of underlying cognitive skills including phonological processing, orthographic processing and memory.

The manifestation in any individual may be dependent upon not only their cognitive profile, but also the language in question.

The definition used above has three separate parts, and may be seen as an amalgamation of the definitions proposed by the Health Council of the Netherlands, the British Psychological Society and the International Dyslexia Association. While they vary in detail, the first paragraph above is generally agreed by all.

The definition provided here may be seen as consisting of three parts:

- 1) The symptom based definition, providing the main characteristics.
- 2) The second paragraph states that there are potentially multiple causes.
- 3) The last paragraph reminds us that dyslexia happens in all countries and languages, but it will vary depending on the language used.

As several commentators have noted, it is the lack of agreement around the definition that has been the biggest barrier to scientific progress in this field.

Whose definition?

Since there is no recognised authority on dyslexia, there are many different versions. And each person will choose the one that suits them best. Thus parents, NGOs, teachers, psychologists, researchers, employers and education authorities may all have their own needs and their own definition.

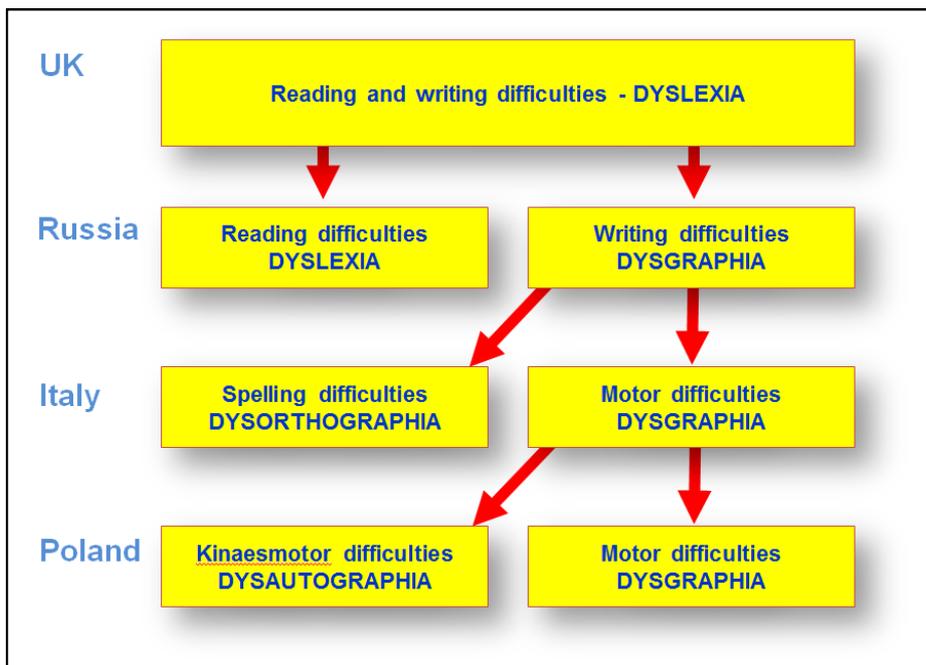
WHO's definition

Since there is no Contrary to what you may read on the internet, the World Health Organisation does not define dyslexia. However, it does provide definitions for Specific Reading Disorder and Specific Spelling Disorder. Those attributed to WHO are actually by Critchley.

Links

The definition – The alternatives

Dyslexia can be reviewed in many different ways. When taken from an international perspective, it is clear that while difficulties appear in all languages, the way they are conceptualised will be dependent not only upon the needs of the specific researcher but also the language in question. Below is a “map” that highlights how other countries prefer to identify more specific areas, that allow for targeted interventions.



Difficulty or Difference

Many individuals suggest that for them dyslexia is a difference (neuro-diversity) and not a difficulty or disability. In a social model of support we should cater for these differences, and adjust learning and other areas to accommodate all dyslexic individuals. While this is to be applauded, it does mean that under current (and foreseeable) funding regimes, the dyslexic individual will not be able to access support funding streams since they are for those who have difficulties.

Which is the master?

“The question is,” said Alice, “whether you can make words mean different things.”

“When I use a word,” Humpty Dumpty said, in rather a scornful tone, “it means just what I choose it to mean - neither more nor less.”

“The question is,” said Humpty Dumpty, “which is to be master – that’s all.”

*From “Through the Looking Glass”
by Lewis Carroll*

Choices

If government are asked to choose between funding a few people who are disabled, and all those who are different (i.e. everybody) which option will they choose?

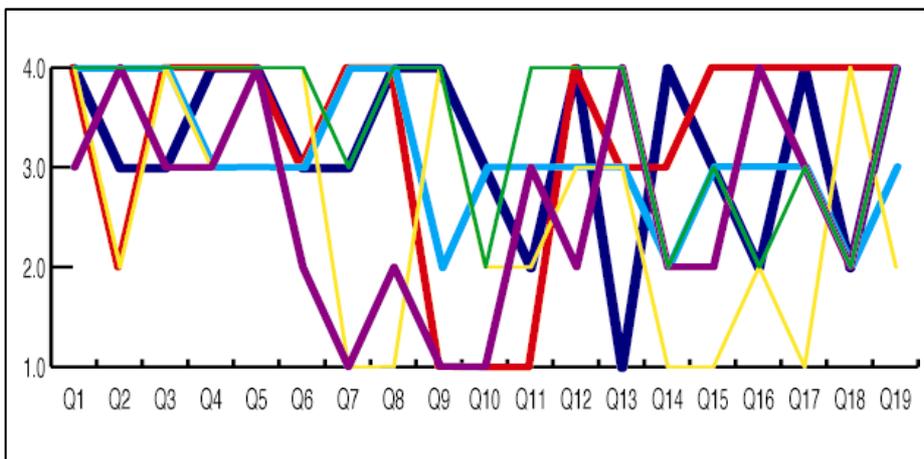
Links

Explaining difference

One of the biggest difficulties faced by the dyslexia community is that it is defined by symptoms which may have a variety of causes. That is, when talking about medical conditions, there is usually a single term that leads to a clear intervention. Where the term encompasses a less distinct group, then the remedy is often less clear. The symptom of dyslexia, a difficulty in acquiring reading and writing skills, can be caused by many underlying cognitive differences.

One of the outcome of this is the diversity of difficulties that any individual may have. Indeed, it is possible to find twins who both have the same levels of difficulties, but need very different support because the underlying causes are so very different.

Below is a graph that shows responses by six individuals to questions about likes, difficulties, strengths and weaknesses. If dyslexia has a single cause, one would expect them all to have the same problems. Clearly from this graph, every dyslexic individual is different



Difference

We understand that people come in all shapes and sizes.



And just because we know their height does not mean we know their glove size .



Or shoe size.

We accept it because we can see it.

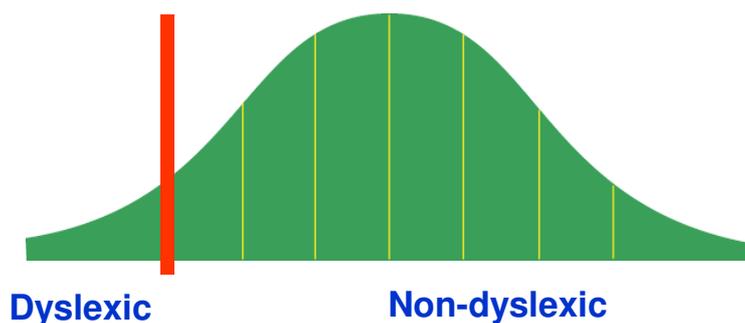
In the same way, there is variability in the physical construction of our brain. But we just do not see it.

Links

Dyslexia in percentage terms

Most people agree that 10% of the population is dyslexic. However, that is a number agreed by consensus. Since the definition does not provide criteria, then it is for society to agree what is the acceptable prevalence of dyslexia. It may be argued that a lower number will reflect only those with severe dyslexia, while a higher number would become meaningless, and lead to a rightful questioning of the authors intentions.

Prof Maggie Snowling says (2000) that statistically 2.28% of any given population will be two standard deviations or more below the mean in a normal distribution. So if we set the definition at two standard deviations, then we will have 2.28% are dyslexic. The percentage quoted is a reflection of the choice of where to make the cut.



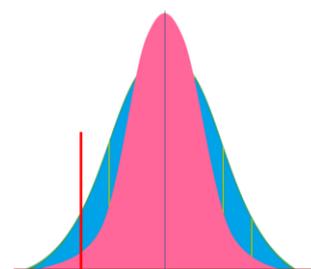
Gender bias

There is a perpetuated myth that there are more dyslexic boys than girls. (And obviously, therefore more dyslexic men than women.) However, re-evaluation of the evidence over the past 20 years has shed light on why those myths appeared. The main cause of bias has been the selection criteria. Basically, boys tend to be more disruptive than girls when failing amongst their peers, and therefore were more like to be referred to psychologists.

Gender difference: Not quite so simple

Although much of the discrepancy between genders can be put down to “sampling bias”, there is some research evidence that suggests it may not be so simple.

Researchers in 2009 found that while the average for males and females were the same, there was a greater spread of results among the boys. This means, at least theoretically, that if you set the lower criteria, you will end up with more boys in the group than girls.



Links

Hawke JL, Olson RK, Willcutt EG, Wadsworth SJ and DeFries JC(2009)

Gender ratios for reading difficulties. *Dyslexia*, Vol 15 p239-242

Web link: <http://onlinelibrary.wiley.com/doi/10.1002/dys.389/abstract>

Dyslexia is more than a reading and writing difficulty

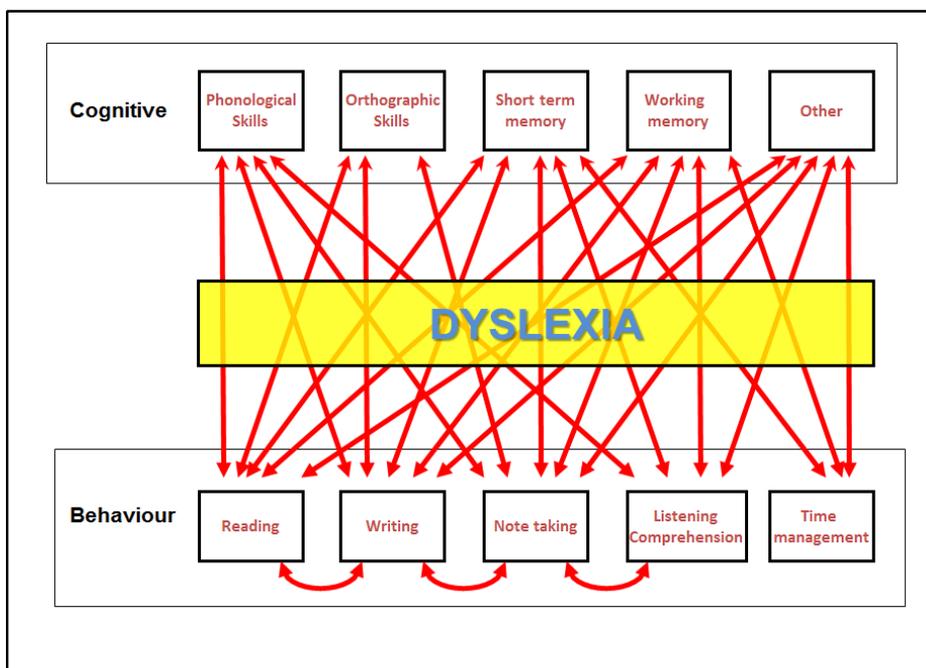
Most people concentrate on the reading and writing difficulties of the dyslexic individual. But there are also many other difficulties that may be a direct or indirect consequence not only of those reading and writing skills but also the underlying cognitive difficulties.

For example, most dyslexic individuals have trouble with study skills, which may be said to include the key areas of

- Reading and writing
- Listening and not taking
- Examinations
- Time management
- Organisation

While there is an element of reading in each of these, there are also cognitive functions, such as memory skills, which underpin the skills development.

While most individuals learn these skills implicitly, for the dyslexic individual they need to be taught explicitly?



Overlapping difficulties

Dyslexia is caused by a combination of cognitive difficulties. However, those difficulties are not necessarily restricted to the areas of reading and writing.

Many dyslexic individuals also have significant issues with motor difficulties (dyspraxia) and maths difficulties (dyscalculia). Both of these also rely on some of those cognitive areas utilised in literacy tasks. These include memory and motor (for handwriting and speech).

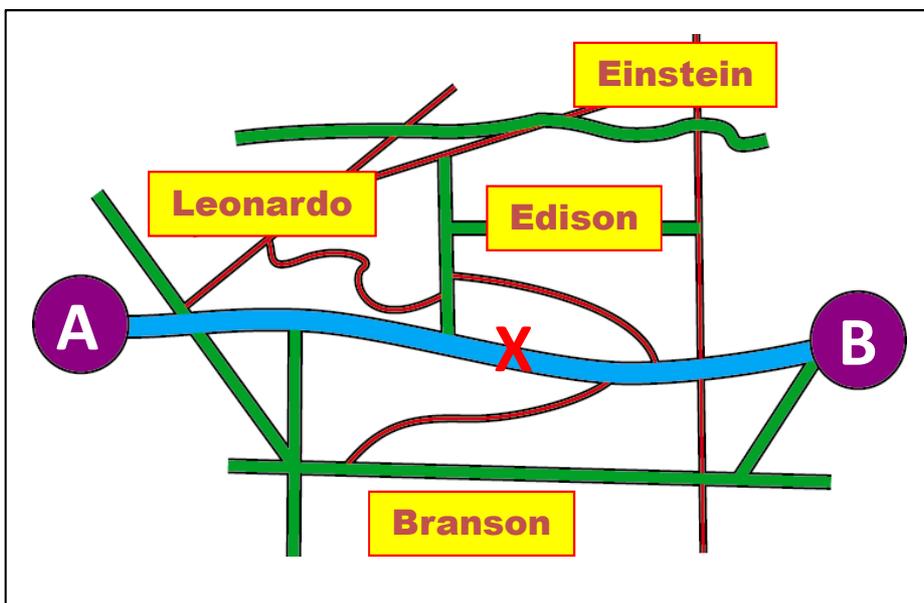
Tying laces and dyslexia

Most people find it curious that difficulties in tying shoe laces can be an indicator of a reading and writing difficulty. The reason is that both require the transfer of a set of skills from the practice, to short term, and then long term memory. Probably they have a common controller in the brain.

Links

Talents, creativity and dyslexia

Consider life as like a journey along a motorway. But for the dyslexic individual, the way is blocked. But there is always a way around, and it is the role of the teachers, tutors and others working with dyslexic individuals to help them find the way. But in finding that new and novel way, they explore new areas not seen by others, find new solutions to the problem. And finding a new solution to a given problem is a good definition of creativity.



Chicken and egg

Do dyslexic individuals become talented because of their dyslexia, or in spite of their dyslexia? Do dyslexic individuals have inherent additional skills that take advantage of the different brain wiring that causes the dyslexia, or is it some form of compensation strategy. That is, there are two possibilities: a) That they have spare time that others would dedicate to reading and writing, and therefore can develop different talent, or b) the desire to find an alternative to show they still are talented. It is the later that has driven a lot of dyslexic champions.

Just a hypothesis

In a presentation by Dr Ian Smythe, the issues around dyslexia and visual talents were (provocatively) addressed. Below is the summary of findings.

Hypothesis 1 – Dyslexic individuals are not visually talented. They can be but it depends on the individual.

Hypothesis 2 – There is no scientific evidence to suggest that they are. At best you can say it is not proven.

Hypothesis 3 – There is no (logical) reason why dyslexic individuals should be higher skilled in this area. Science has yet to provide the logic.

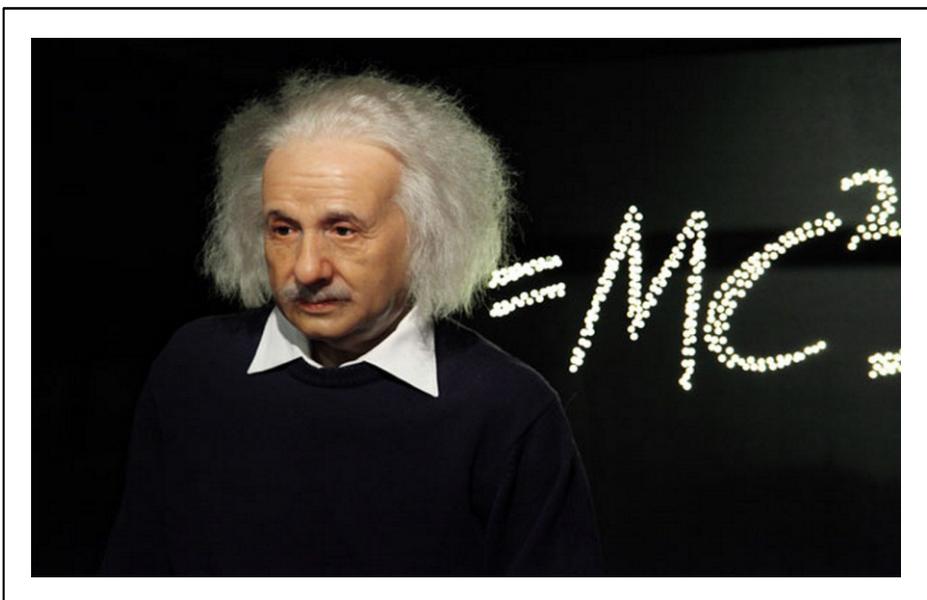
Hypothesis 4 - The related myths are perpetuated based on false assumptions. **Correct**

Hypothesis 5 – Dyslexic individuals can have an advantage because of their lack of literacy skills. **Correct**

Links

Famous dyslexic individuals

On the internet there are many lists of famous dyslexic individuals. But are they all dyslexic, and does this suggest that being dyslexic means that you are more likely to be highly talented? And to what extent do those talents mask the underlying difficulties? Take for example Einstein. He had many traits to that seem like dyslexia. But perhaps he just had talents in other areas that he preferred to explore, making it look like literacy difficulties rather than actual difficulties. An extended report in the Journal of Learning Disabilities suggested that if he was dyslexic, then the case is not proved.



Creativity through compensation strategies

The logic is as follows:

People who are not dyslexic develop their reading skills, and by necessity neglect other areas.

People who are dyslexic are limited in their potential to develop their literacy skills, and therefore have time to develop alternative skills as well as a desire to shine in another area.

Links

Famous dyslexics: http://en.wikipedia.org/wiki/List_of_people_diagnosed_with_dyslexia

Photo credit: Petr Kratochvil

<http://www.publicdomainpictures.net/view-image.php?image=8612&picture=albert-einstein>

Famous dyslexic people

Actors

Orlando Bloom, actor
Tom Cruise, actor
Keira Knightley, actress

Authors

Hans Christian Andersen, Danish writer
Agatha Christie, author

Businessmen

Richard Branson, entrepreneur
Richard Rogers, architect
Charles Schwab, founder of U.S. brokerage firm

Inventors

Alexander Bell, telephone
Thomas Edison, light bulb

Music business

Noel Gallagher, musician
Cher, singer and actress

Sportsmen

Steven Redgrave, rower
Jackie Stewart, racing driver

Other

Jamie Oliver, chef
Pablo Picasso, artist and sculptor
Steven Spielberg, film director