

Monozygotic twins and macro-entanglement

Guy Lyon Playfair

E-mail: gplayfair@waitrose.com

Abstract

For at least two centuries, there has been speculation that there is something “special” about how twins communicate, notably monozygotic (MZ) or “identical” ones, but also though less frequently if they are dizygotic (DZ) – fraternal or non-identical. (All twins mentioned here are either MZ or assumed to be, except where otherwise stated). “Are twins telepathic?” is a regularly asked question to which attempts to give a convincing answer have only recently begun to be made. One may also formulate this question in other ways, using the language of 21st century science, e.g. “Do twins demonstrate what we might call, if only by way of an analogy, macro-entanglement?” There is now instrumentally recorded evidence suggesting that some do, but not all of them, and only under certain very specific conditions. Theoretical physicist Sir Roger Penrose has even suggested that consciousness is an effect of quantum entanglement, “which might have implications for the twin bond and the nature of shared consciousness between twins”. The possibility of such implications needs further study.¹

Introduction

There is a great deal of anecdotal evidence regarding telepathy and other forms of apparent entanglement between twins, and there have also been some formal studies. Taken at face value, some of the data is extremely compelling.

To be sure, not all scientists accept the reality of these phenomena. According to one professor of psychology, “Twin telepathy is due to the highly similar ways in which they think and behave, and not extra-sensory perception.”² Nor do all twins accept it. “Alex” has this to say on a web site devoted to twin matters: “As an identical twin who knows many other twins, I can tell you for a fact that twins don’t have telepathy. Any that say they do are either pulling your leg or attention seeking. I’d appreciate it as a twin and a human being if you stopped spreading lies; the preconceived notions and discrimination are hard enough as they are.”³

To twins who experience telepathy-like phenomena regularly, however, the reality of the special connection between some pairs of twins is beyond doubt. For instance, Olympic athlete and twin Mo Farah speaks from his own experience: “Whenever Hassan is upset, or not feeling well, I’ll somehow sense it. The same is true for Hassan when it comes to sensing how I feel. He’ll just know when something isn’t right with me. Then he’ll pick up the phone and call me, ask how I am. Or I’ll call him.”⁴

Californian supermodels Sia and Shane Barbi make a similar point more concisely. “We have that twin thing going on,” Sia told an interviewer in 2009. “Wherever we are in the world, we kind of know what the other one’s doing.”; “That’s right,” Shane added. “It’s instinctive. It’s a twin thing.”⁵

This “twin thing” is also a controversial thing, and despite the vast amount of anecdotal evidence for it, it is also one of the most under-researched subjects in any field of science. Among many unanswered questions are the following:

- Why are some twins convinced that they have had telepathic contact at a distance with their co-twins, while others are equally convinced that they have not?
- Are “identical” twins really identical?
- Why has there been so little interest in the “twin thing” by scientists, and why has there been almost no serious attempt to test it under controlled conditions?
- If it were to be accepted as a real effect, what would the implications be for psychology and biophysics?

History

John Wesley, the founder of Methodism, refers in his journal for April 2, 1781 to a young woman he knew who had a twin sister “between whom and her there is so strange a sympathy that if either of them is ill, or particularly affected at any time, the other is so likewise.” This sympathy operated even when they were asleep, when both simultaneously dreamed that a disgruntled servant was planning to murder their mother, as he later admitted. The subject of twin telepathy (TT) was first made widely known not by scientists, but by popular writers. It played a prominent part in Alexandre Dumas’s novel *The Corsican Brothers* (1844), one of whom, born a conjoined or “Siamese” twin, testifies:

“We had to be separated with a scalpel, which means that however far apart we are now, we still have one and the same body, so that whatever impression, physical or mental, one of us perceives has its after-effect on the other.”

He goes on to mention that he has just been feeling “profoundly sorrowful” with “terrible pangs” for no obvious reason, concluding that his brother, six hundred miles away, must be feeling likewise. As well he might have been, for he was being killed in a duel.

Catherine Crowe, in her (non-fiction) *The Night-Side of Nature* (1848) mentions the “admirable sympathy” which was “generally manifested, more or less, between all persons twin-born,” citing a case in which a woman was observed by a doctor to react violently at the exact time her twin (then abroad), was drowning. Crowe gives the impression that such a nonlocal response to a distant stimulus was not unknown in her time, although her suggestion, like that of Dumas, that all twins are telepathy-prone is not

supported by the evidence we now have. Scientific research into this admirable sympathy got off to a late and slow start in 1876, when Galton wrote letters to all the twins he could locate, enclosing a short questionnaire.⁶ He was apparently inspired by a melodramatic case from France, thoroughly investigated in 1863 by a Dr. Baume, in which the physician described “how two [twin] brothers died, their madness, developed as a result of the same cause, [another simultaneous and identical dream], showed roughly the same features, began at the same time and would have ended, without either’s knowledge, in the same form of suicide at the same place.” Baume reported this remarkable case at first hand and published it in one of France’s leading scientific journals. It is the earliest report we have of a case of this kind witnessed by an appropriately qualified professional.⁷ Galton was mainly interested in the “nature and nurture” aspect of twins, though he did include an account suggestive of telepathy in which a pair had given each other identical presents, (as they still do today), adding that “other anecdotes of like kind have reached me about these twins,” but giving no details and apparently doing no further twin research of his own. Indeed, much of the history of TT study resembles a relay race in which every runner who grasps the baton promptly drops it.

It was only with the founding of the Society for Psychical Research in 1882, and coining of the word “telepathy” in the same year, that serious research into the twin connection began, by SPR founder members Edmund Gurney, Frederic Myers and Frank Podmore. They questioned thousands of members of the general public on their psychic experiences of all kinds, noting that in the case of telepathy, “On the supposition that a natural bond between two persons is a favourable condition for telepathic influence, there is one group of people among whom we might expect to find a disproportionate number of instances, namely twins.”

This is just what they did find, and they published five of their best cases, all investigated in detail at first hand. Each described remote awareness of a death or a life-threatening incident involving a distant twin, even when one was in Canada and the other was in China. In no case was any kind of good news the subject of a telepathic message. The SPR pioneers felt justified in describing their work as “the foundation stone of a study which will loom large in the approaching era.”⁸ This was not to be. Far from looming large, it did not loom at all for more than fifty years, when zoology professor at the University of Chicago (and twin) Horatio H. Newman, author of the first major study of twins to include a section on telepathy, published several examples of apparent TT, including one from his own experience.⁹ Yet it was not until 1965 that the first controlled laboratory experiment designed to record TT instrumentally was published in a peer-reviewed science journal. Using an electroencephalograph, researchers Duane and Behrendt claimed to have shown brainwave entrainment following artificial induction of alpha rhythm.¹⁰ Their brief paper (just one page) aroused numerous justified objections from readers, to which the authors replied that while their methods may not have been perfect, they claimed they had still proposed “an interesting hypothesis” and that “preliminary experimentation has indicated that we may be on the right track.” They duly appealed for attempts to replicate their work, apparently receiving only one, and seem to have left the field of psi research with their tails between their legs. The sole follow-up experiment, using a plethysmograph, showed that physical reactions in response to emotive slides could be recorded, the authors printing the entire chart of one pair’s performance “to show how obvious the reactions are.” They do indeed appear obvious, but since this report appeared in a parapsychology journal, it was generally ignored by the established science community.¹¹

The importance of selecting subjects was emphasized by a team of psychologists in Toronto, who questioned 35 twins of whom twelve reported having had “ESP-like experiences” which again were predominantly awareness of pain or distress. However, like Galton and Newman, they did no further research, although their work in selecting ideal twins for experiment remains relevant today and is frequently cited. They also collected several first-hand accounts of experiences including one that echoes those of both Mo Farah and Dumas’ fictional Corsican: “I frequently know when there’s something wrong, not specifically, though. I just feel on edge and unhappy for no reason.”¹² It was becoming clear that TT was more likely to occur when one twin was subjected to some kind of negative experience, making it difficult to design laboratory experiments that would get past an ethics committee. Fortunately for researchers, there is no need for unethical experiments, since twins often report awareness at a distance of unpleasant occurrences such as accidents, falls, panic attacks or even sudden death.

In 1997, after thirty years of failure even to attempt a replication of the experiments mentioned above, a London television company was able to show what may be the first instance of instrumentally recorded TT in front of a live studio audience. An artificially produced shock was given to one twin while the other, in a distant room behind a soundproof door, was wired to a four-channel polygraph, which showed clear sudden deflections of the pens recording her galvanic skin response and chest respiration. Similar demonstrations were subsequently shown on three TV programmes, using such shock stimuli as dropping china plates behind the subject and having one twin plunge a bare arm into a bucket of ice-cold water, causing the other one to take a sharp intake of breath. This coincided with a major deflection of his chest respiration graph.¹³ These were far from fully controlled conditions, but served as pilot experiments showing how twins can be tested for community of sensation, and have their responses instrumentally recorded. Finally, in 2012 and 2013, a peer-reviewed scientific journal published two papers (the second a replication of the first), which gave a full summary of TT research, and lack of it, to date, in addition to accounts of the controlled experiments carried out in Copenhagen and London. Here, controls were considerably tighter, and results were generally consistent with the less formal ones described above.¹⁴ Once again, it can be claimed, as it was in 1886, that a foundation stone for a future study has been laid, and one with considerably more scientific support than the one laid more than a century earlier by the SPR ground-breakers. Whether this will finally “loom large,” if at all, remains to be seen.

Discussion

Despite recent advances in methodology and some promising results, the subject of TT remains generally neglected. There are two reasons why this is so. One is that funds for the large-scale study it needs, but has never had, are next to impossible to obtain. The other is that it can be explained away, as it often is, as “thought concordance,” whereby genetically identical twins can be expected to share a number of likes, dislikes, preferences and habits. They can also fall ill at the same time, displaying the same symptoms, and there are a number of reports of simultaneous deaths even for twins in old age. Such coincidences are predictable and need not involve any telepathy. However, concordance is hardly an adequate explanation for one twin’s reaction to an unpredictable event affecting the other one for which there is no genetic cause. Cases in this author’s collection, many of them received directly from the source, include twins

who have reacted when their distant brothers or sisters have been in a car crash, fallen downstairs, broken a leg or a nose, been given a black eye, had a painful injection, got stuck in railings or a car seat belt, burned an arm, begun to suffocate, given birth several weeks prematurely, murdered their partners, committed suicide or been shot dead.¹⁵ None of this amounts to “proof” of TT, nor to confirmation of the MZ twin relationship as one of nonlocal entanglement. Yet it is fully consistent with both hypotheses. Attempts to explain away such incidents as merely “due to the highly similar ways in which they think and behave” suggest a lack of familiarity with the evidence. As author Peter Watson, who has no time for telepathy, concedes: “Are all the coincidences that are being collected at Minnesota [see below] a sort of camouflage, a signal for something else that is going on at a deeper level?” Something like telepathy?¹⁶

Another question awaiting an explanation is why only about a third of MZ twins, and half as many dizygotic (DZ) ones, ever have any kind of nonlocal experience. Can it be that just as “some animals are more equal than others” on Orwell’s fictional farm, some twins are more identical than others? At least one variable, independent of any genetic, epigenetic or environmental factors, indicates that they are indeed, not only physically (different fingerprints and iris patterns) but also psychologically. This is the timing of the splitting of their zygote (egg) after fertilisation. Researchers at the University of Indiana (Bloomington) have found, after studying 46 pairs of twins, that – to simplify somewhat – the sooner the zygote splits, the greater the differences will be in their personalities. In the case of the late splitters, who only divide between eight and twelve days, they remain literally entangled until birth, and are more closely bonded after it. So it seems reasonable to suppose that the later the split, the greater the likelihood of a telepathic link. This is an easily testable hypothesis, provided that the timing of division is known, as it now can be thanks to the availability of ultrasonic scanners.¹⁷ It was tested by the Copenhagen researchers mentioned above, with two young women who had been witnessed at birth bound to each other by their umbilical cords and had to be disentangled by hand. They reported numerous instances of telepathic communication; for example, when one was having an operation for kidney stones, the other suddenly collapsed in severe pain, whereupon her grandfather, who was looking after her, telephoned the parents who informed him that the operation had just begun. This pair performed exceptionally well on the polygraph test, giving considerable support to the hypothesis mentioned above.

Shared dreams

Since Wesley’s 1781 account of a shared dream by two twins one of whom was in “another part of the kingdom,” one cannot help feeling that this is a subject researchers have gone out of their way to ignore. French sleep expert Michel Jouvét has studied numerous sleeping twins, reporting that “we found essentially the same organization of sleep – the same timing, the same duration of REM” (rapid eye movement, indicating dream activity), yet it seems it did not occur to him to ask his subjects if they ever had similar dreams. He does note in passing that one or two of them mentioned spontaneously that they had, but he did not follow up this promising line of enquiry. Indeed, Jouvét went so far as to say that “we can’t suppose that identical twins have the same dreams,” adding by way of explanation that “after all, they don’t have the same waking lives.” Another relay baton dropped.¹⁸

At the University of Minnesota the largest twin study ever has been running since 1983, with thousands of pairs flown in from all over the world for two weeks of intensive questioning by a battery of psychologists on every aspect of twinship except, as you've guessed, telepathy. The closest they ever came to it was an attempt to study dream communication as part of a survey of brainwave similarities between twins. These revealed "striking within-pair similarity" especially in the psi-conducive alpha band, leading to speculation that some kind of resonance effect was involved, which might include transfer of information. To test for this, psychologist David Lykken monitored a pair of twins sleeping in different rooms, while a tape recording was played of each twin calling her sister's name now and then, to see if they reacted in any way. It seems that they did, though we are not told how, whereupon Lykken claimed, unconvincingly, that it was due to some unspecified equipment malfunction. This only became known fifteen years later when Lykken happened to mention it in an interview.¹⁹ In 2009, researchers were able to question 224 twins about shared dreams, finding that 24 (15 percent) of the MZ twins reported having had them, compared to only half that number of the DZ subjects.²⁰ We do not have a control group of non-twin reports, yet these figures suggest that MZ twins appear to have shared dreams more often than chance would predict. They also indicate that this is one of many aspects of the twin bond that deserves further study, which has not yet been done by Jouvett, nor the Minnesota team, nor anybody else.

Twins undoubtedly do have telepathic dreams. One somewhat surrealist example was reported to this author by the dreamers themselves, two lively seven year-old girls, speaking in perfect unison: "We got on the bus and all the people in it were dead, and I tried to buy a ticket but the driver said I can't because he hasn't got any money. Then we got off and the boys chased us in the park." There has been at least one controlled laboratory experiment in dream telepathy involving a pair of MZ twins, in which one of them was asked to concentrate on a picture randomly selected from a pool of six, when his sleeping brother's REM indicated that he was having a dream. The judge, after reading the dream transcripts, had no difficulty in picking the picture that had been selected.²¹

Conclusion

Newton famously declared that he could see further by standing on the shoulders of giants. In TT research not only are there as yet no giants, but those who manage to clamber on to their colleagues' shoulders promptly fall off, littering the relay track with dropped batons. Yet despite all the false starts, aborted experiments and lack of funding for large-scale ones, certain themes keep recurring. The case for twin telepathy can be made on the basis of "similar fact evidence," which has led to convictions in courts of law, and so should also be accepted in scientific research, not as conclusive proof but as a robust and fully testable hypothesis first described by the SPR founders in 1886. It assumes that if a number of accounts of similar telepathic experiences (or anything else) are reliably reported by sources with no known connection to each other, they are more likely to be true. The special bond the pioneers mentioned is not unique to twins. It also exists, for example, between mothers and babies and between pets, especially dogs, and their owners. Yet the bonds vary both in strength and in duration. Babies grow up and become less intensely bonded to their mothers. Dogs have a short life compared to ours. The twin

bond, however, can last a long lifetime and so is more amenable to investigation. It is also the only one of these bonds that is relatively easy to record, as on a polygraph.

It may be asked what is so special about twins? The short answer is that while there is abundant evidence, notably from dream and ganzfeld experiments, that non-twins can produce impressive evidence for purely *mental* telepathy, twins are able to transfer *physical* sensations even to the extent of black eyes or burns when they have an accident, which their twin does not. This is compelling evidence for treating the pair as a single macro-entangled system, as a sudden unexpected shock breaks through the barrier that enables them to lead separate lives, reuniting them as the single entity that they were prior to division in the womb.

The twin/particle analogy was once frequently used by popular science writers and lecturers including some with degrees in physics, such as author Danah Zohar, who is quite explicit: “The gist of the EPR paradox can be understood by imagining the fate of a hypothetical set of identical twins,” she writes, [one of whom, in London, falls downstairs and breaks a leg.] “No-one would argue that any shared genetic material could explain it if the twin living in California were then to suffer a similar fall.” However, Zohar adds, if quantum theory was right and Einstein was wrong to reject the “spooky action at a distance” it seemed to imply, then the California-based twin would fall and break a leg at exactly the same time.²² Einstein may have been misinterpreted rather than wrong, yet even during his lifetime there were cases on record in which nonlocal spooky action was well witnessed and recorded, for instance by Gurney and his SPR colleagues (see ref. 8). Today, as physician, author and MZ twin Larry Dossey states, citing evidence published in peer-reviewed science journals: “Distant individuals often share feelings, sensations and thoughts, particularly if they are emotionally close. These experiences are called *telesomatic events*. Hundreds of such cases have been reported over the years but have been largely ignored.”²³

Just how common such community of sensation is between twins was shown in a 1981 survey, which revealed that about 30 percent of the 600 twins questioned reported experiences suggestive of it.²⁴ These fell into six categories:

- 1 Anticipation of imminent contact, such as knowing when one twin is about to call the other.
- 2 Simultaneous and identical speech or thought, e.g. saying something or singing a song the other has just *thought* of.
- 3 Identical writing, as in exams, even making the same mistakes.
- 4 Choosing the same gifts for each other.
- 5 “Just knowing” that the other is in trouble.
- 6 Sympathetic pain.

While there may be an element of concordance involved in items 1 to 4, numbers 5 and 6 are much harder to explain other than by telepathy. Comments from those who, like Mo Farah and his brother, “just knew” their twin had a problem include “I felt very uneasy,” “I felt something was wrong,” or “I was overcome with misery.” Even more evidential are cases, of which there several on record, in which one twin has an accident in which an eye, nose or arm is wounded while the other feels a sudden pain in exactly the same

part of the body, sometimes producing a bruise, burn or blister on the corresponding spot. This is visible evidence for macro-entanglement, rarely if ever reported by non-twins.

Postscript – Do it yourself

Testing for TT is not difficult. All you need is a pair of carefully selected twins, an experienced and open-minded polygrapher, and two acoustically separated rooms and, above all, an enthusiastic and positively motivated experimenter who can engage the twins in the task and encourage an expectation of success. The difficulty is obtaining funding, in view of the taboo attached to any attempt to investigate any form of “psychic” or “paranormal” phenomenon, which still prevails despite the abundant evidence that at least a third of MZ twins and a sixth of DZ ones experience nonlocal communication at some time in their lives.²⁵

Selection is very easy, and can be done by telephone, mail or email. The ideal subjects will be those who have already had experience of apparent telepathy. To find out if they have, just ask them.

Tests with Zener cards are a waste of time. Even tests in the ganzfeld condition are not likely to produce exceptional results, as indicated in a 2010 experiment in which selected twin subjects did better than chance, but no better than the average of all ganzfeld trials held to date.²⁶ This may be because twins do not become telepathic when they have no need to be. For the ideal thought experiment, you could give Twin A a good bang on the head with a saucepan, or a strong electric shock in a sensitive spot. For an acceptable laboratory one, you only need to give Twin A a sudden but harmless shock while Twin B is relaxing comfortably in a distant room and wired to a polygraph. Experiments should reproduce the kind of stimulus that has been found to give the best results in real-life contexts.

We are still in the early days of TT research. However, there are some aspects of it of which we can be fairly sure. One is that all identical twins are not alike. There are major differences among even MZ ones. Some lose the strength of their initial bond early in life, and assert their individuality even to the extent of barely maintaining contact with their co-twins. Others remain closely and strongly bonded throughout their lives, in some cases even marrying twins and sharing a home with them. As for telepathy, they belong to one of three categories: those who have never experienced it, those who have occasionally, and those who have frequently and take it for granted as a fact of their lives – sometimes a very useful one when it comes to picking up a distant distress signal. There are several reports on record of such a signal saving a life. To establish beyond reasonable doubt that two humans can exchange information at a distance – as numerous twins already know they can, as confirmed by polygraph recordings – will add considerably to our knowledge of both psychology and biophysics. The most important finding in the brief history of TT research may be that MZ twins are twice as likely as DZ ones to do so, as large-scale surveys have shown. This is hard evidence in support of the traditional belief that there is indeed something special about the “twin thing.” If there were not, we would not expect to find such a clear difference, or indeed any difference at all, between the two groups. If we can only overcome the persistent taboo that postpones exploration of hidden areas of the mind, who knows what the study of our expanded minds will reveal?

References

1. Cited in Matthews., R. "I think, therefore I am subatomically entangled." *Sunday Telegraph*, February 25, 2001.
2. Wiseman, R. *Paranormality. Why we see what isn't there*. London: Macmillan, 2011, pp. 84-5.
3. <http://multiples.about.com>
4. Farah, M. *Twin Ambitions*. London: Hodder & Stoughton, 2013, p. 1.
5. Bearn, E. In a Barbi World. *Sunday Telegraph Magazine*, June 9, 2002, pp. 25.
6. Galton, F. *Enquiries into Human Faculty*. London: Macmillan, 1883, pp. 165.
7. Baume, Dr. Singulier cas de folie suicide chez deux frères jumeaux. *Annales Médico-Psychologiques 4 série 1*, 1863, pp. 312-3.
8. Gurney, E., Myers, F.W.H., and Podmore, F. *Phantasms of the Living*. London: Trübner, 1886, cases 76-8, 134, 230.
9. Newman, H.H. *Twins and Super-Twins*. London: Hutchinson, 1942.
10. Duane, T.D. and Behrendt, T. "Extrasensory electroencephalic induction between identical twins." *Science*, October 15, 1965, pp. 367.
11. Esser, A., Etter, T.L. and Chamberlain, W.B. "Preliminary report: physiological concomitants of 'communication' between isolated subjects." *International Journal of Parapsychology*, 9(1), 1967, pp. 53-6.
12. Sommer, R., Osmond, H. and Pancyr, L. "Selection of twins for ESP experimentation." *International Journal of Parapsychology*, 3(4), 1961, pp. 55-73.
13. *The Paranormal World of Paul McKenna*. Carlton TV, 1997; *Richard and Judy*, Channel 4, 2003; *Miracle Hunters*. Discovery, 2004; *Naked Science*. National Geographic, 2005.
14. Jensen, C.G. and Parker A. "Entanglement in the womb: a pilot study on the possible physiological connections between identical twins with different embryonic backgrounds." *Explore*, 8 (6), 2012, pp. 339-47.
Parker, A. and Jensen, C.G. "Further possible physiological connections between identical twins." *Explore*, 9 (1), 2013, pp. 26-31.
15. Playfair, G.L. *Twin Telepathy*. 3rd ed. Guildford: White Crow Books, 2012.
16. Watson, P. *Twins. An investigation into the strange coincidences in the lives of separated twins*. London: Sphere, 1984, pp. 139.
17. Sokol, D.K. et al. "Intrapair differences in personality and cognitive ability among young monozygotic twins distinguished by chorion type." *Behavior Genetics*, 25 (5), 1995, pp. 457-66.
18. Jouvet, M. in Williams, R. "Twin Dreams." *Science Digest*, November, 1982, pp. 26-8.
19. Lykken, D. in Wright, L. *Twins: Genes, environment and the mystery of identity*. London: Weidenfeld & Nicolson, 1997, p. 52.
20. Brusewitz, G. *Personal communication*. 2009.
21. Ullman, M., Krippner, S. and Vaughan, A. *Dream Telepathy*, 2nd ed. Jefferson NC: McFarland & Co., 1989, pp. 87-8.
22. Zohar, D. *The Quantum Self*. London: Bloomsbury, 1990, pp. 19-20.

23. Dossey, L. "Unbroken Wholeness: The emerging view of human interconnection." *Explore*, 9(1), 2013, pp. 1-8.
24. Rosambeau, M. *How Twins Grow Up*. London: The Bodley Head, 1987.
25. Lichtenstein, P. and Baker, M.R. "Telepathy in Twins." Poster, 29th Annual Meeting of the Behavior Genetics Association, Vancouver, 1999.
26. Parker, A. "A ganzfeld study using identical twins." *Journal of the Society for Psychical Research*, 73, 2010, pp. 118-26.