

Twin Facts

- About 22% of twins are left-handed, compared to only 10% of the general population
- The tallest male twins in the world were born in Troy, Michigan! They are Michael & James Lanier, who are 7'6"
- Twins born to the African tribe Galoa are always named "Wora" (first born) and "Yeno" (second born)

Famous and Historical Twins

- Benji and Joel Madden of Good Charlotte
- Dylan and Cole Sprouse, Disney Channel stars
- Tegan and Sara Quin, members of Indie music duo, Tegan and Sara
- Jessica and Lisa Origliasso, founders of the musical duo, The Veronicas
- Esther Pauline Friedman and Pauline Esther Friedman, well known advice columnists better known as "Ann Landers" and "Dear Abby".
- Jenna and Barbara Bush, daughters of former President George W. Bush
- Cleopatra's Twins, Alexander Helios and Cleopatra Selene II, born in 40 B.C.
- Mark Kelly and Scott

Introduction

The Michigan State University Twin Registry (MSUTR) is excited to bring you its seventh installment of our annual newsletter. Here, we report on the history of twin studies, current research findings from our studies, ESP in twins, and twins in literature. In addition, you can find some interesting twin facts and information about the current studies in our lab.

But first, we'd like to explore how far twin research has come! You likely are aware how important and special twins are for scientific research. Researchers began to realize the importance of twins as early as the 1st century when Posidonius pondered if twins' shared similarities were due to their shared astrological circumstances. However, it wasn't until the 20th century that researchers realized there were two types of twins; monozygotic (MZ) and dizygotic (DZ). Today's researchers use this distinction of MZ and DZ twins to test the heritability of traits and characteristics. They do this by comparing the degree of similarity between MZ twins, who share 100% of their genes, to DZ twins, who share about 50% of their genes (i.e., the same amount as non-twin siblings). If MZ twins are twice as similar for a trait as DZ twins, researchers can infer that genes probably influence that trait.

Research Findings from Our Studies!

For many MSUTR studies (in particular, see Studies 3 and 4 listed on the next page), we collect information about the twins' behaviors and characteristics from both the twins' parents and from the twins themselves. Over the years, many twin parents have indicated that they are curious about the similarity of these twin and parent reports. To help answer this question, MSUTR researchers examined the similarity between parental reports of twin characteristics and twins' self-reports of these same characteristics. Figure 1 shows the percent agreement between parents and twins' for each of these characteristics. In general, there was more agreement between parents and twins for characteristics that are more easily observable (e.g., pubertal development) than characteristics that may be harder for a parent to observe (e.g., depression). Although some of the lower correlations might be surprising to some parents, they are on par with other research on parent versus child reports, and even teacher reports, of a child's behavior (e.g., Youngstrom, et al., 2003). The differences observed between parents and children could be due to what we call "situational specificity", or the idea that parents largely interact with their children in particular contexts (at home but not school). Alternately, it may be the case that some

But did you know that twin research is expanding beyond these basic principles into new territories and more complex family histories? For example, researchers are studying children of identical twins, who are genetically half-siblings (sharing about 25% of their genes) rather than cousins (who share about 12.5% of their genes). These identical twin parents are also as genetically related to their co-twin's children (i.e., their nieces and nephews) as they are to their own children (i.e., they share about 50% of their genes with both). The MSUTR plans to begin a study of children of twins to examine how different rearing environments may interact with genetic risk to influence traits and behavior. Knowledge generated from these studies will lead to new discoveries in several areas of health and well-being. If you are a twin with children and would be interested in learning more about this study, contact us to be added to our mailing list!

So, many thanks to you, our twin families, for contributing to science in ever more diverse and important ways!

Sincerely,

Drs. Alex Burt and Kelly Klump
(Directors of the MSUTR)

children keep their feelings to themselves, and so their parents may not be aware of what their child is feeling. Finally, because they are still young, children may not always be able to accurately explain what they do and feel. Such results suggest that parents and children should work hard to talk openly with one another about their lives, but to also be aware that it is common for parents and children to have a different understanding of the child's feelings and behaviors.

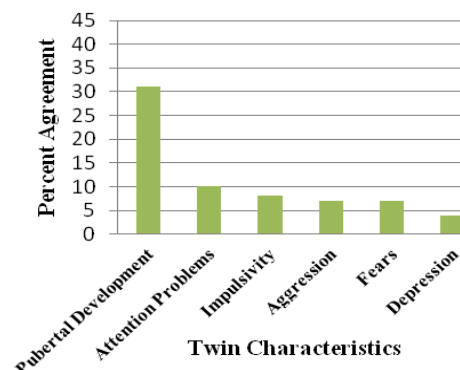
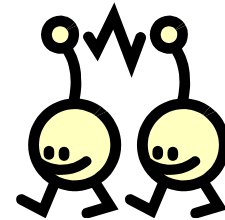


Figure 1

Extrasensory Perception (ESP) in Twins

According to the dictionary, ESP is defined as “perception or communication outside the normal sensory capability, as in telepathy (i.e., communication between people of thoughts, feelings, or desires that can’t be understood scientifically) or clairvoyance (i.e., the perception of objects or events that cannot be perceived by the senses).” There are many stories of twin ESP, and we often have families describe some of their twins’ ESP experiences with us! For example, one pair of twins reported that they bought the same pair of pants, at the same store, in the same color, on the same day, even though they lived on different continents!

While there has been no scientific evidence to support ESP in twins, the deep emotional connection between most twins, along with the fact that they share DNA, they shared a womb, and they share much of their lives, may explain why twins do or feel similar things simultaneously. Others argue that it’s not ESP that twins experience, but rather they know each other so intimately, that they can predict what their co-twin may be thinking or feeling and how they might behave or what they might say. While science hasn’t yet found evidence to support the existence of ESP, we can’t help but wonder how many of our twin families have had their own “ESP” experience!



Twins are a biological phenomenon fascinating to all, so it is no surprise that when it comes to literature, many authors elect to incorporate twins into their character plots. While we can trace twin themes as far back as Greek Mythology, we’re going to explore some more contemporary examples.

Known for her best-seller, *The Time Traveler’s Wife*, Audrey Niffenegger is also the author of *Her Fearful Symmetry*. This supernatural 2009 novel describes the lives of MZ twins, Julia and Valentina, who inherit the London flat of their late aunt, Elspeth, whom they have never spoken with or met. Elspeth was the estranged identical twin of their mother (*Bonus challenge! Can you figure out how genetically related the identical twins are to their mother’s identical twin sister? See answer below). Julia and Valentina work to understand the rift that separated their mother and her sister while dealing with their own struggles of entering young adulthood as identical twin sisters.

Answer: They are as related to their aunt as to their mother!

TWINS IN LITERATURE



Perhaps the most famous set of twins in contemporary literature are Fred and George Weasley, of J.K. Rowling’s hit series, *Harry Potter*. While these two dubious twins are not the star characters, they have become beloved over the past decade for their good-intentioned mischief. The characters are played by real-life MZ twins, James and Oliver Phelps.

Another “must read” on our twin literature list is the nonfiction work, *Identical Strangers: A Memoir of Twins Separated and Reunited*, co-written by twins Elyse Shein and Paula Berenstein. These MZ twins were adopted into separate families just after birth, and were reunited many years later. The memoir follows the twins’ journey to build a relationship, despite being separated for the first 35 years of their lives, and portrays the startling similarities between them.

Our Current Studies

1. **Female Twin Study of Hormones and Behavior:** This project investigates changes in ovarian hormone levels and behavior across the menstrual cycle, and whether these associations are influenced by genes, in female twins ages 16-25.

2. **Michigan Twins Project:** This is a twin registry for twins between the ages of 3 and 25 living within Michigan. Families complete a brief questionnaire that assesses family composition and the health status of both parents and twins that can be completed online or via a mail-in questionnaire.

3. **Twin Study of Behavioral and Emotional Development - Child:** This study examines relationships among genes, mood, peers, family relationships and acting out behaviors in same-sex and opposite sex twins ages 6-10 years old.

4. **Twin Study of Mood, Behavior, and Hormones During Puberty:** This project investigates the influence of hormonal, genetic, and environmental factors on a range of psychological characteristics during puberty in female twins between the ages of 8-15 years.

If you are interested in study 1, or know someone who is, please contact us at:

msutr@msu.edu or call (517) 432-3665

If you are interested in study 2, or know someone who is, please contact us at:

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If you are interested in study 3, or know someone who is, please contact us at:

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