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**Bouchard's Research on Identical Twins**

Thomas Bouchard of the University of Minnesota did the most famous research on genetic influences in humans. He studied *identical twins separated since birth*. Identical twins come from a single egg, fertilized by a single sperm, which splits after the egg starts to develop. Therefore identical twins are closer to being genetically identical than any other humans. By studying identical twins who were separated at birth and raised by different families, Bouchard could see which similarities might emerge despite a different family environment. These similarities might be those that are heavily influenced by a person's genetic heritage.

What was Bouchard's research? How did it start?

Bouchard's data set was unique, probably a one-time event in history, because modern adoption agencies no longer break up sets of identical twins. Bouchard's project started when he read news reports of two identical twins reunited after a lifetime apart: James Lewis and James Springer were separated weeks after birth. When they were reunited, an extraordinary collection of coincidences emerged.

Both of the "Jim twins" had married and divorced women named Linda. Both had second marriages with women named Betty. Both had police training and worked part-time with law enforcement agencies. Both had childhood pets named Toy. They had identical drinking and smoking patterns, and both chewed their fingernails to the nub. Their first-born sons were named James Alan Lewis and James Allan Springer. (Holden, 1980)

How were Oskar and Jack raised? In what ways were they similar?

In one case, identical twin babies (Oskar and Jack) were raised in extremely different cultures. The two were born in Trinidad and separated shortly after birth. After that, their childhoods were very different.

The mother took Oskar back to Germany, where his grandmother raised him as a Catholic and a Nazi youth. Jack was raised in the Caribbean as a Jew, by his father, and spent part of his youth on an Israeli kibbutz.

But similarities started cropping up as soon as Oskar arrived at the airport. Both were wearing wire-rimmed glasses and mustaches, both sported two-pocket shirts with epaulets. They share idiosyncrasies galore: they like spicy foods and sweet liqueurs, are absentminded, have a habit of falling asleep in front of the television, think it's funny to sneeze in a crowd of strangers, flush the toilet before using it, store rubber bands on their wrists, read magazines from back to front, dip buttered toast in their coffee... Bouchard professed himself struck by the similarities in their mannerisms, the questions they asked, their "temperament, tempo, the way they do things." (Holden, 1980)

Farber (1981) reviewed 121 case studies and confirmed the existence of "remarkable—sometimes unnerving—similarities" in many dimensions.

In what respects were twins most identical?

What twins seem to share most is what might be called *personality* -those peculiarities of manner and personal preference cited above: laughter, vocational interests, posture, tastes in clothes, choices of names.

Earlier we noted that different personalities of a multiple personality patient tend to display strikingly different skills, mannerisms, interests, and esthetic choices. These are precisely the ways in which Bouchard's identical twins *resembled* each other. Perhaps in normal (non-multiple) personalities, the dominant or first-formed personality is greatly influenced by a person's genetic heritage.

The findings on identical twins are so spectacular that they have attracted a lot of critical attention. Some psychologists feel the similarities have been exaggerated by descriptions emphasizing coincidences. When large amounts of data such as IQ tests from the twins are compared, the twins seem to be no more similar than any sets of brothers or sisters. However, as Farber notes, it is precisely in the area of *personality* that the greatest resemblances appear.

What did Hay find out about the brains of twins?

Australian twin researcher David Hay ran one of the world's largest twin studies, collecting data from 587 sets of twins for over a decade. Hay noted that identical twins are often "mirror images" of each other, with facial structure, fingerprints, and dominant hand reversed. This mirror-image duplication extends to the brain. If one twin is right-hemisphere dominant, the other tends to be left-hemisphere dominant. Because the two sides of the brain are somewhat specialized for different things, the twins usually think in somewhat different ways. One may excel in math, the other in language skills, for example.

However, even twins who *think* differently can be very similar in *temperament* and other *personality* variables. Bouchard did *not* find outstanding similarities between identical twins on such standard measures as IQ tests or standardized personality tests, but he *did* find striking similarities were *mannerisms* (such as wearing rubber bands on the wrists, or reading magazines backwards), *personal choices* (such as choice of names for pets or children, or choice of clothing styles), and *expressive social behavior* (shyness or social ease, laughter, facial expressions and posture). These are exactly the sorts of things many of us refer to as personality, so in that sense Bouchard's findings can be interpreted as strong support for genetic influences on personality.