

How twins can answer the question: Do we have free will?

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We have all come in contact with, seen on TV, or read about identical twins. Oftentimes, they seem to act the same way, say the same things and one is almost able to predict what the other twin will do next; after all, they have the same genes. So, if twins' genes provide them with similar personality traits and lead them to make the same choices, does that mean that everyone's genes determine how they act and how they choose? Do our genes preprogram our choices? Free will is a key element in Judaism. The question is, does the tenet of free will in Judaism contradict genetic predetermination?

Identical twins contain the same exact DNA. Each protein and enzyme in their body and each physical feature are all produced from the same DNA template. For years, twins have been the center of research, especially to determine if diseases or traits are solely determined by the genetic code. For example, identical twins were used to identify those environmental factors that trigger diabetes, epilepsy, and autism in one identical twin but not in the other. The U.S. National Aeronautics and Space Administration (NASA) studied identical twins to determine whether space travel affected the genes of the identical twin who was the astronaut versus the identical twin who stayed on Earth. Identical twins have also been subjects in studies of personality traits and whether these traits were determined by the genes or by the environment [1].

It may be difficult to study nature vs. nurture in sets of identical twins because they typically grow up in the same environment, making their "nurture" aspect identical. The most effective way to study the influence of the environment on identical twins is to analyze twins who were separated at birth and raised in contrasting settings. In 1980, Robert Shaffan attended college in upstate New York and unexpectedly encountered his long lost identical twin, Edward Galland. Neither had an idea of the other's existence. Shaffan and Galland soon found that they were not just twins, but triplets! David Kellman, the missing triplet, found the two young men from the news, and the three triplets were united. The triplets were separated at birth and were unknowingly part of

a psychological study on nature vs. nurture. The lead researcher of the study, conducted at Yale University, was Dr. Peter Neubauer, who died in 2008 without publishing the results. By viewing these men in interviews and on TV, many interesting observations were noted. At the interview the three men showed up wearing the same pair of shoes. Was this genetically predetermined? However, the men led very different lives, even after discovering one another. At first, in interviews and at appearances, they seem so connected; they even jointly opened a restaurant in New York City. But it did not remain like this for long. Unfortunately, Edward committed suicide and Robert and David explained that they were very different people. Although they had some similarities, they believed that their distinct environments shaped their characters. Nurture can push nature in many different directions and we are not limited by our genetic constitution [2].

In *Strive for Truth*, Rabbi Dessler describes a man who is a heavy smoker. At night, he experiences severe chest pain, so bad that he promises not to smoke the next morning. However, upon awakening, the craving kicks in and in his mind the thought is, "I'll just have one." So, he smokes just one cigarette, which then turns into two, then three, then ten. How could this happen? He wanted so badly to get rid of his physical pain from smoking, even more than he wanted a cigarette. So why was he unable to resist? Rabbi Dessler explains that there must be something else besides his two drives, to smoke and to stop smoking. That something else is "him." He has the choice to follow his will of ridding this chest pain, but instead he follows his will of "I can have just one more." He very well knows that one cigarette will lead to another cigarette, but chooses it anyway. *Behira*, or free-will, is just the same. A person's *behira* is completely dependent on him. When one chooses good over bad and in turn overcomes his *yetzer harah*, the evil inclination, he has chosen the stronger will to do good over his will to do otherwise [3]. So too, our DNA may lead to act a certain way, but ultimately we have the choice to rise above our genetic predetermination.

In the *Torah*, we have two accounts of twins. The

most famous are Esav and Yaakov, the sons of Rivka and Isaac, and the second set, Pharez and Zerah, the sons of Tamar and Judah. We know from the *pasuk* in Bereshit (25:22), “the children struggled within her,” that Rivka had physical difficulty during pregnancy. When they were born, Esav was described as red and hairy while Yaakov was holding onto the heel of his brother. When looking ahead in the *Torah*, the two brothers seem like polar opposites. Esav becomes a strong hunter while Yaakov becomes a learned and calm man. It seems almost obvious that these two men cannot be identical twins. However, the fact that Yaakov “took his brother by the heel in the womb” (Hosea 13:3) indicates that they shared the same amniotic sac and apparently were actually monozygotic identical twins. But, their physical appearances would indicate otherwise. A possible reconciliation of this discrepancy can be attributed to twin-to-twin transfusion syndrome, in which both fetuses shared a common placenta. If the placenta is shared unequally by the twins, one twin may have a share too small to provide necessary nutrients whereas the other twin may have an overabundance of nutrients – resulting in identical twins exhibiting differing appearances (phenotypes), albeit sharing a common genotype. The grabbing of the heel indicates that they were monozygotic and identical in DNA, yet their actions present them as very different characters. Clearly one's actions are not only based on their DNA. Like Yaakov and Esav, one has the inner power of rising above what was encoded in one's chromosomes [4].

Interestingly, Rav Samson Raphael Hirsch [5], in his commentary on Bereshit 25:24, states that, in fact, Yaakov and Esav were identical twins. Rav Hirsch writes, “After Rivkah heard of the complete contrast between the two sons that were to be born, everyone thought that the two would not look alike, which does happen even in the case of twins (*i.e.*, in fraternal

twins). The surprise was to find that the twins were indeed identical.” The only difference between the two twins was in their constitution. Esav was healthier and more physically developed than Yaakov but they were in fact identical twins. Rav Hirsch continues on to say, “The external resemblance, had they compared it with the revelation about the divergent paths, should have drawn the attention of the boys' educators. It was their duty to recognize that the root of the future dissimilarity lay deep below the surface, hidden in the depths of personality.” Their differing appearances reflected their future discrepancies and should have been a clue to their educators to nurture the boys accordingly. This account in *tanach* furthers the point that genetic constitution does not automatically determine a person's choices. Yaakov and Esav had the same genes, yet they led two very different lives. Their physical appearance foreshadows this and highlights the idea that a person is in control of their choices and has the power to choose their path in life.

The next time you see two twins acting the same way, instead of assuming that their identical DNA is what is causing this, think of the environment and the inner own control over one's actions. We all have the power to rise above our inherent inclination. We may have been given certain tendencies but ultimately we all have free will that allows us to choose to act and how to live.

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