

The effects of the moon on human behavior



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Ever since the ancient times of Greek mythology and the Mayans, the moon was regarded as an object that held influence over human behavioral patterns and emotions. Many sources of folklore, myths, and legends promoted this idea with their own hypothesized effects, including “ induced lunacy and epileptic seizures” (Britt, 2009). But the moon itself appeared not to be the culprit; instead, its different phases appeared to cause the variances in our behavior.

All of the moon’s phases, when observed as a cycle instead of individual phases, are called the lunar cycle. It consists of eight main phases in this order: the New Moon (when none of it is visible), the Waxing Crescent, the First Quarter (when half of it is visible), Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, and Waning Crescent. From there it starts over again. It was originally thought that the more of the moon you could see, the more aggressive humans would become. Others believed that it impacted fertility, affected the menstrual cycle, upon other things.

Yet, an experiment that has truly proven a correlation has not been found during background research. Those that claim they have found a relationship between behavioral patterns of humans and the lunar cycle have either not tested all phases (usually just the full moon and new moon), or have not separated people into specific enough categories, leading to widely varying data from source to source.

These were two main kinds of experiments that were found during prior research before surveying or information collection had even begun. The first of these types was the kind that only did a survey on many people during the

full and new moons. The problem with these is that they did not survey people during every moon phase, nor did they record whether the moon was waxing or waning. Only recording during two phases of the moon, rather than all of them, gives results that are probably coincidental or results that might not show the moon phase in which people are most aggressive, passive, etc., assuming they found a correlation (what if the crescent or gibbous moon caused the most aggression/passiveness?).

The other type of experiment most commonly seen was one in which all phases of the moon were included, but the people were not separated into different age groups or genders. Rather, the results of those experiments only included how many people were surveyed and during what phase of the lunar cycle they took the survey. All of the found surveys of this type had widely varying results from source to source, as well as information that was not tested using an actual statistical test, rather, graphed and then observed, with those observations put onto the paper.

The main problem that most likely affected results was the nonexistent separation of different groups of people. If people of different age groups were separated, or if genders were separated, it could prove differing correlations happening at the same time (e. g. men becoming more aggressive as the moon grows more full, while women become more aggressive as the moon gets less full). When left unsorted, however, it could lead to mixed results that were coincidence or merely random, sometimes both at once.

Along with these types of surveys that don't always give accurate information, there are different sources with conflicting information. For example, a researcher at the Institute of Immunology and Experimental Therapy in the Polish Academy of Sciences said that, " Admittance to hospitals and emergency units because of various causes (cardiovascular and acute coronary events, variceal hemorrhage, diarrhea, urinary retention) correlated with moon phases. In addition, other events associated with human behavior, such as traffic accidents, crimes, and suicides, appeared to be influenced by the lunar cycle" (Zimecki, 2006). Yet, at the same time, a Clinical Psychiatry News site reported this: " An early meta-analysis looked at data from 37 studies examining the relationship between phases of the moon and different types of ' lunacy,' including psychiatric admissions, psychiatric disturbances, crisis calls, suicides or self-harm, homicides, and other types of criminal activity... The authors found that the phases of the moon accounted for no more than 1% of the variance in human behavior" (Leard-Hansson and Guttmacher, 2009).

The reason this experimentation needed to be done is partially because it is hard to find information that truly provides detailed information on the subject, and when that is found, it conflicts with another source. Plus, as of now, there are no tests on this that involve separating completely different kinds of people and measurements of aggression or passiveness, then showing detailed information on both of those and relating them to one specific experiment. This is the purpose of the project. This information could provide insight into more complex psychological processes within human

beings, and explain certain cycles people go through mentally that, for now, are ambiguous.

To see whether external forces other than our own planet and its people act upon the human psyche could open up many possibilities in the field of psychology, or dispel myths relating to one part of those forces. This is the other reason the experimentation needed to be done. If external forces actually impacted our minds, and if it were proven, it could lead to many breakthroughs in the psychology subject, explaining things we don't know how to now.

Of course, a hypothesis can be made based on information found during research, even though some of it is conflicting. Most sources say that there is an effect on human behavior as the lunar cycle continues; this was the more common result. They never separated their genders or age groups, however, so that required some extra research on the differences between the adult psyche, the child psyche, the male psyche, and the female psyche.

According to Jennifer Denisiuk, men tend to show more aggression outside of their relationships, being more direct and using violence or yelling. Women tend to show their aggression inside of the relationship, but unlike men, they are indirect and choose to exclude people from certain groups, although they may get violent sometimes and act just as men would, meaning that women more commonly use indirect "sabotage" (2004).

On differences between child and adult psyche, children and teens are shown to be more malleable than their adult counterparts. "...young brains have both fast-growing synapses and sections that remain unconnected. This

leaves teens easily influenced by their environment and more prone to impulsive behavior, even without the impact of souped-up hormones and any genetic or family predispositions” (Ruder, 2008). Teens are not the only ones like that, though, as children are also easily influenced by their families, the media, their friends, and other people in their lives according to Lewis’s *Child and Adolescent Psychiatry: A Comprehensive Textbook* (Martin and Volkmar, 2007).

From this information, it was hypothesized that men will become more aggressive as the moon becomes fuller, and women would become more aggressive as the moon gets less full. This is because their behavior patterns seem to deviate and differ so much, that there probably won’t be similarities in terms of when they feel aggressive in relation to men. Also, the majority of surveys that said people feel more aggressive on full moons were ones that incorporated more men than women, while the ones that said no correlation did not provide this data or used an equal amount of men and women.

It was also be predicted that the results for children and teens, in the end, will be much more erratic than the results for older people. The reasoning for this, as stated above, is because children and teens are more easily influenced by those around them and the media, possibly resulting in seemingly more random data than the data from adults and the elderly.

Methodology

After realizing what had to be done and formulating the hypotheses that would be relied on, experimental preparation began. This consisted of planning what would be done, when, how, and who would be asked to do

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certain things. This also had to encompass the lunar cycle somehow, and incorporate every phase (which meant the experimentation had to last at least twenty-nine days). Most of the planning was based around a lunar calendar, rather than dates.

The experimental preparation took, in addition to a plan and schedule, a way to actually conduct studies on people of different demographical groups. The best way to go about this, as previous scientific experiments have shown, was a survey. Hence, one had to be made as soon as possible in order to be able to test all of the phases of the moon and to get them handed out. But before even that could be passed out, an informed consent form was required to be signed and returned, and if working with people under the age of eighteen years, a parent signature was also required. This was the reason that the first focus was to create the informed consent form. The form stated the purpose of experimentation, how confidentiality would be maintained, benefits (or lack of them), and contact information in case there were any questions about the survey or experiment in general.

After the informed consent form had been finished, work on the survey could begin. Firstly, the questions were planned so that the focus of my experiment could easily be analyzed from the answers I would be getting back to the questions chosen. It also had to be a survey that wouldn't take too long for people to fill out, because if it were that way, it would become tedious, and finding subjects would become harder; that meant less time to do every other step in the process. Luckily, the second survey created was an excellent length for both gathering information and having people be able to take it without it becoming wearisome. It was one that, as soon as given

back, would show ordinal data (a type of data that can be ordered into categories, but have no arithmetic relationship) to whomever received it.

On this survey, there was a section at the top of the paper where all subjects were to write the date they took the survey, circle their gender, and circle their respective age group. There were five possible age groups (in years) to choose from: 8-12, 13-17, 18-29, 30-59, or 60+. After that section, there were six statements, and next to those statements were five boxes where people could choose Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. Those statements simply assessed whether people were feeling more aggressive or passive, if they knew why they felt that way, and if they happened to be under constant stress/anxiety.

Those statements were followed by seven more, only in this section there were Yes and No boxes instead of Agree, Disagree, Neutral, etc. boxes to check. Those statements were (in this order): I felt different when I woke up today. I feel different now. I know exactly why I felt/feel different. I have consumed alcohol in the past day. I have consumed alcohol in the past week. I have consumed alcohol in the past month. I feel a certain emotion(s) more strongly today than I normally do.

Finally, there was one box at the end where people wrote down what emotion(s) they felt more strongly than usual if they answered yes to the statement, “ I feel a certain emotion(s) more strongly than I normally do.” After doing so, they were done with that survey for the day. Overall, the average time that it took each subject to finish each survey was about one to two minutes, when asked themselves how long it took.

The surveys were short, nevertheless large in number for each subject. What this means is that each subject, after returning their informed consent letters, would receive a packet containing fifteen copies of the same survey that they were to fill out every two days, starting from the day they received it. Instructions in the form of an algorithm came with the surveys for those who were confused as to what they were supposed to do. This was how information for all phases of the moon was collected. The reasoning behind using the same people to collect information for each phase of the moon was because every person has different personalities. Different personalities mean that there is no way to assess whether people actually became more aggressive or passive, because some people might always feel more aggression or passiveness than others. Using the same subject, however, yields results that show increases and decreases in both because the same people can be assessed for changes.

However, to secure results that were as accurate as possible, people were chosen based on how often they could be checked on. If they were people that could easily be contacted every day or two and reminded of their surveys, they were chosen (if they were a part of a gender or age group that was needed). This was to prevent backdating, which could give inaccurate results, even if only slightly off. Because of this preventative measure, all surveys, save for very few from a small number of people, were filled out the same day as everyone else's. Surveys filled out past the date of January thirty-first were unacceptable, so everyone was on the same schedule survey-wise.

While those surveys were already passed out and being filled out every two days, admissions information from a psychiatric hospital in Louisville was collected with permission from the administrator. The data was made completely anonymous by having the names marked out before it had even been received. This information was placed on a spreadsheet and left until all data had been collected for two full lunar cycles (approximately 58 days).

Eventually, the surveys had been filled out fully by everyone over the course of thirty days. Once they had been completely done, they were collected and the information from those surveys was put onto a spreadsheet.