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The Physical Death of Jesus Christ:

The "Swoon Theory" and the Medical Response

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The Crucifixion and the Resurrection are arguably two of the most important occurrences in the life of Jesus Christ. Although there are many dominations of Christianity in the world today, all Christians hold at least one belief in common: Jesus Christ, the Son of God, died on the cross, rose from the dead, and ascended into heaven. There are some skeptics, however, who argue that Jesus never actually died on the cross. Because Jesus' death and resurrection are part of the foundation of the Christian religion, if this hypothesis were true, it would call the entire Christian system of beliefs into question. There are a number of theories based on this hypothesis that try to "explain away" Jesus' death on the cross. Some theories claim that he actually died but was not resurrected, and that any visions of Jesus after the Crucifixion would were just hallucinations by his disciples. Other theories claim those who searched for him on Easter Sunday must have checked the wrong tomb, and that he never rose from the dead at all. One theory that grew in popularity with 18th century rationalists became known as the "Resuscitation Theory", or "Swoon Theory", as it later became commonly known (McDowell 1981). Put simply, this theory states that Jesus did not actually die during the Crucifixion. Rather, he simply "swooned" and fell unconscious while hanging from the cross. Later, while he was in the tomb, he recovered from his injuries and was resuscitated. To those that saw him afterwards, it appeared that he had risen from the dead when, in fact, he never actually died in the first place.

This is a highly unlikely theory. Biblical scholar and historian Gary Habermas claims that the only reasonable explanation for what happened to Jesus around 30 AD was that he died on the cross and was resurrected. Naturalistic alternatives simply cannot explain the historical data in support of any other claim (Habermas 2004). While Habermas' argument here is certainly logical, there are some people that it would fail to fully convince. If it is not within a person's worldview to accept the fact that Jesus died on the cross, he or she will have a difficult time

subscribing to Habermas' argument from reasonability. Therefore, instead of appealing to the reasonableness of the Crucifixion and Resurrection, we will examine the medical aspects of the Jesus' ordeal in order to show, with certainty, that Jesus died on the cross. We will first examine the arguments put forth by proponents of the Swoon Theory. Then, we will briefly touch upon the history of crucifixion as capital punishment, paying special attention to the Roman tradition. We will discuss the events that led up to Jesus' Crucifixion, and detail, in medical terms, the physical torment he was put through before being hung from the cross. Finally, we will examine hypotheses put forth by contemporary medical doctors and surgeons, which attempt to explain how Jesus died, focusing primarily on argument put forth by Joseph W. Bergeron, MD. Dr. Bergeron concludes that shock, complicated by trauma-induced coagulopathy, was likely the primary mechanism of Jesus' death on the cross, and that it is medically impossible for him to have survived the ordeal on Good Friday (Bergeron 2012).

Heinrich Paulus, an eighteenth century German theologian and Biblical critic, was one of the first to introduce the Swoon Theory (Aggett 2006). Paulus dedicated his life to presenting naturalistic and rationally grounded explanations of biblical matters, and subscribed to the "misperception theory" in explaining miracles. He believed that unusual events are often misperceived, and are usually given miraculous explanations (Aggett 2006). His pursuit of scientific explanations led him to conclude that Jesus did not die on the cross at all; rather, he fell into a death-like stupor, from which he later recovered and was revived. To support his claims, Paulus points that Jesus "died" rather quickly for a victim of crucifixion; so quickly, in fact, that even Pontius Pilate was surprised at how rapidly Jesus' death came about (Mk 15:44). This was, according to Paulus, because Jesus was not actually dead. Further, Jesus cries out right before he "dies", indicating that his strength was far from being exhausted at that point (Aggett 2006).

Paulus insists that, in Jesus' comatose state on the cross, the only proof of actual death would have been physical decay of the body. Because this was not witnessed, it cannot be logically claimed that Jesus ever died (Aggett 2006).

This idea is something that other Swoon Theorists have clung too in order to support their arguments. Because there were no heart monitors or brain scans during the time of Jesus, the only way to *prove* he actually died would have been based off of evidence of physical decay, which was never given. After Jesus slipped into this coma on the cross, Paulus claims that a "providential combination of circumstances" allowed him to be brought back to consciousness later on in the tomb. When the Roman solider stabbed Jesus' side, it was actually more of a "prick" than a stab – it did not hurt him further. Later, the coolness of the air inside the cave was able to revive Jesus. And, of course, a fortuitously timed earthquake came and rolled away the stone at the entrance to the tomb, just in time for Jesus to exit (Aggett 2006). Paulus insists that the Swoon Theory is an entirely plausible theory.

Friedrich Schleiermacher was a German theologian who followed in the footsteps of Paulus, and was one of the first theologians to address the depth of the "hermeneutical problem" in determining the historical facts of Jesus' life (Aggett 2006). Unlike Paulus, Schleiermacher does not argue that Jesus survived his Crucifixion; rather, he believes that there are simply not enough facts to support either side of the argument. He insists that the gospels should be read as secular, historical retellings, and he points to the contradictions between the four accounts of Jesus' death and resurrection (Aggett 2006). Because of these discrepancies, Schleiermacher held Jesus' life and teachings to be the most important part of his life – significantly more important than the details of what may have happened to him on one Friday in April. The most important parts of Jesus' life were his ministry and his willingness to die for God. His

Crucifixion and Resurrection were of lesser importance, especially because they could never be completely verified. In fact, they were entirely "incomprehensible" (Schleiermacher 1975). As a resolute rationalist, Schleiermacher treated all things probabilistically. He admits, then, that it is *possible* that Jesus died and rose from the dead; however, it is more *probable* that Jesus simply returned to consciousness after falling into a trance-like state on the cross. Or, in other words, it is more probable that he simply "swooned" (Aggett 2006).

Another, more contemporary, historian who supports the Swoon Theory is Barbara Thiering. She, too, believes that Jesus did not die on the cross. Thiering bases her argument on the following passage from the Gospel of Matthew:

> Some of them that stood there, when they heard that, said, This man calleth for Elias. And straightway one of them ran, and took a sponge, and filled it with vinegar, and put it on a reed, and gave him to drink. The rest said, Let be, let us see whether Elias will come to save him. Jesus, when he had cried again with a loud voice, yielded up the ghost. (Mt 27:47-50)

A similar passage is found in the gospels of both Mark and John. According to Thiering, "vinegar" that Jesus drank was actually wine that had been spoiled by poison. This was the same poison that he had refused earlier in the day, when he was first hung from the cross. Normally, the poison would take a few hours to act, but because of the ordeal Jesus had been through physically, it rendered him unconscious soon after it was administered (Thiering 1992). Thiering goes on to say that Jesus later recovered from the poison, and was aided in his escape by his friends. He lived out the rest of his days in seclusion, only appearing to the disciples sporadically, as mentioned in the Bible on occasion (Thiering 1992). Like many Swoon Theorists before her, Thiering's narrative makes some very vague assumptions. Almost every Swoon Theorist seems to believe in a Christian conspiracy that enabled Jesus to survive the ordeal. For example, Herbert Schonfield, another twentieth century Biblical scholar, claims it was Joseph of Arimathea who helped Jesus escape from the cross alive (Habermas 1996). While

there are different versions of the theory, most Swoon Theorists make two common claims: (1) the "blood and water" that flowed from Jesus' side indicated that he was still alive when the spear pierced his side, and (2) Jesus "died" more quickly than other victims of crucifixion, indicating that he probably was not yet dead when he was removed from the cross. While the narratives proposed by Swoon Theorists are certainly entertaining and intriguing, they are rarely scientifically sound. These theories tend to significantly underplay the severity of Jesus' physical state before he was even nailed to the cross, which is essential in understanding his death.

Crucifixion was a harsh punishment in which, historian Martin Hengel claims, "the caprice and sadism of the executioners were given full rein," (Hengel 1982). Crucifixion was first introduced by the Persian Empire, and each society that subsequently employed it as a means of punishment developed its own practices and traditions. For example, some crucifixion victims were hung upside down, some were nailed to the cross, and some were tied (Hengel 1982). Crucifixion happened differently across the world. The ancient Romans had their own "norm" of crucifixion, which was unique in the sense that included a harsh flogging beforehand. In addition, the Roman victim was forced to carry his own *patibulum* (the horizontal beam of the cross) to the site of crucifixion, and the victim was crucified with his arms outstretched (Hengel 1982). The Romans also employed crucifracture, a process in which the victim's legs were broken below the knee so that he could no longer support his own weight. This made breathing difficult and often hastened death. The Roman's torture of the victim beforehand and the breaking of his legs, while sadistically brutal, likely helped to shorten the actual torments of crucifixion (Hengel 1982). The torment that Jesus endured before he was nailed to the cross was more severe than most prisoners, so it is not unlikely for him to have died more quickly than other victims of crucifixion.

The Swoon Theories certainly are entertaining stories about the Crucifixion, but that is all that they are: stories. In his book *The Resurrection Factor*, Josh McDowell provides an in-depth look at Jesus' Crucifixion, and begins to shed light on the ridiculous nature of most Swoon Theories. The Romans were *good* at what they did, McDowell claims, and would have enacted a number of, what McDowell calls, "precautions" to ensure that their crucifixion victims did not survive (McDowell 1981). The precautions they took with the Crucifixion of Jesus were even more comprehensive than normal. These included six different trials (three Jewish and three Roman), a large stone in front of the entryway to the tomb, the Roman guard, the Roman seal, and, of course, death by crucifixion itself. Crucifixion was harsh enough to kill a person on its own, but Jesus' Crucifixion was especially violent (McDowell 1981). It probabilistically could not have been survived.

Jesus' first physical ordeal came on the night before his crucifixion, at the hands of his arrestors. He was struck by the soldiers who arrested him as he faced the Sanhedrin and Caiphas, the High Priest (Jn 18:22). Dr. C. Truman Davis, a medical doctor who wrote on the Crucifixion, then claims that "the palace guards then blindfolded [Jesus] and mockingly taunted him to identify them as they each passed by, spat on him, and struck him in the face" (Davis 1965). So, before his official court sanctioned punishment even began, Jesus had already been beaten multiple times. When he was finally sentenced to death by crucifixion, Jesus was first flogged according to the Roman tradition. The whip used in these cases was a special kind of whip, known as the flagrum. The flagrum consisted of long, leather straps of varying lengths attached to a sturdy handle. Pieces of bone and lead were woven into the straps in order to inflict the maximum amount of pain on the victim as it was brought down on his bare flesh (McDowell 1981). Jesus was stripped of his clothing and tied to a post, where the flagrum was then brought

down across his shoulders, back, and legs. In the early stages of the flogging, the bits of iron and lead woven into the flagrum's straps would cut into the victim's skin and subcutaneous tissues (Edwards 1986). This would incite bleeding from the capillaries and veins in the skin. As the flogging continued, however, the lacerations would reach the level of underlying skeletal muscles, causing profuse arterial bleeding (Davis 1965). According to Jewish law, no more than 40 lashes were allowed to be administered in a flogging. McDowell points out, however, that the Romans had no such law (McDowell 1981). What's more, the severity of each person's flogging likely depended upon the disposition and aggression of the guard administering the beating (Edwards 1986). Because of the political tensions of the day, Roman soldiers were known to have strong anti-Semitic sentiments, and this certainly would have increased the viciousness of Jesus' beating (Bergeron 2012). Davis elaborates:

> The heavy whip is brought down with full force again and again across Jesus shoulders, back and legs. At first the heavy thongs cut through the skin only. Then, as the blows continue, they are cut deeper into the subcutaneous tissues, producing first an oozing of blood from the capillaries and veins of the skin, and finally spurting arterial bleeding from vessels in the underlying muscles. The small balls of lead first produce large, deep bruises which are broken open by subsequent blows. Finally the skin of the back is hanging in long ribbons and the entire area is an unrecognizable mass of torn bleeding tissue. When it is determined by the centurion in charge that the prisoner is near death, the beating is finally stopped (Davis 1965)

Thus the beatings would have continued for Jesus, the insubordinate political insurgent, until he was very near to death.

The great contempt the Roman soldiers had for Jesus is evident in the events that followed his flogging. When Jesus was finally untied from the post, he was mercilessly mocked by the onlookers. The Romans threw a cloak across his shoulders, handed him a kingly "scepter", and fashioned him a crown made of thorns. Jesus had already lost a significant amount of blood at this point from the flogging, and Davis points out that the crown and robe would have

added to the blood loss greatly. The scalp is one of the most vascular areas of the body, and Jesus had the crown driven directly into his head, where he was beaten even further (Davis 1965). When the Romans had tired of this mockery and finally ripped the cloak from his back, it had become adherent to clots of blood and serum in his wounds. The abrupt ripping of the cloak, along with causing searing pain, would have reopened the wounds he had already received, causing him to bleed further (Davis 1965). The intense pain and blood loss that Jesus had already experienced at this point would have been enough to lead to circulatory shock (Edwards 1986). Indeed, as we shall see, this type of shock was a major contributing factor to Jesus' certain death.

Traditionally, after being sentenced and beaten, Roman prisoners were then forced to carry their own *patibulum* to the site of their execution. The *patibulum* was the horizontal piece of the cross, and it was fastened to the vertical *stipes* during crucifixion. The two pieces together formed the recognizable "cross" upon which people were crucified in Roman times (Hengel 1982). The *stipes* were permanent fixtures at the crucifixion site, and the journey to them was about 500 yards. The prisoner, who had already endured a harsh beating at the hands of the Roman guards, had the 110 pound *patibulum* strapped to his shoulders, and was forced to make the journey to the *stipes* (McDowell 1981). Jesus had already been so weakened by the flogging that he physically could not bring himself to make the full journey, and the soldiers escorting him enlisted the help of a passerby (Lk 23:26). This episode speaks to the severity of the injuries he had sustained up until this point. Jesus was already close to death before a single nail had been driven through his flesh.

Most crucifixion victims were not buried properly, and were instead thrown into mass graves or disposed of haphazardly. For many years, historical evidence pointed to the Romans *tying* criminals to the cross, and not nailing them. In the 1960s, however, the skeletal remains of

a young Jewish man who had been crucified during the Roman Period were discovered in present day Israel. The remains showed an 11.5 cm iron nail had been hammered through the heel of his foot (Maslen & Mitchell 2006). This evidence shed light on the mechanism of crucifixion employed by the Romans. The long, iron spikes were commonly used to fasten the victim's feet directly to the front of the *stipes*, and to fasten his wrists to the *pantibulum*. In the wrist, the spikes were likely driven between the radius and the carpal bones, or directly between the proximal and distal rows of carpal bones. The nail would likely have crushed the median nerve, which runs up the length of the arm, and would have caused intense pain in the periosteal layer of bone tissue. The nerve damage would have caused fiery pain in both arms and ischemic contractures in both hands due to lack of blood flow. Similar nerve damage would have been stimulated in the peroneal and plantar nerves in each foot, causing similar burning pain up the feet and legs (Edwards 1986).

At this point, Jesus has been nailed to the cross. He was beaten and flogged until the flesh on his back was ripped apart and he was close to death. He was crowned with thorns and too weak to carry a 110 pound *patibulum* on his own, and he now hangs from the cross by iron nails through his wrists and feet. Often, when Swoon Theorists question the validity of the death of Jesus, they neglect to address the severity of the torment he went through *before* he was hung on the cross. An understanding of this torment is essential in order to understand the medical causes of Jesus' death, especially considering the amount of blood he lost. So Jesus now hangs, with the flesh on his back torn apart and rubbing against the rough wood of the cross, as he fights shooting pains in his arms and feet. He is constantly struggling with how to support his weight, as he must rely either on the nail through his feet or the nails through his wrists. As he sags, the pressure is put on the nails in his wrists, transmitting fiery pain along the median nerves in his

arms. As he tries to push himself upward, the nail in his feet tears through the peroneal and plantar nerves (Edwards 1986). As the day wears on, his muscles begin to fatigue, and it becomes harder to push himself upward.

With this fatigue comes a paralysis of the pectoral muscles, and Jesus' intercostal muscles lose their ability to function properly. This makes breathing increasingly difficult (Davis 1965). The weight of Jesus' body, pulling downwards on his outstretched arms and shoulders, would have fixed his intercostal muscles in an inhalation state, making it possible for Jesus to inhale, but rendering exhaling nearly impossible. The only way he would have been able to exhale required that he use his cramping, nearly paralyzed muscles, to pull himself upwards on the cross, releasing the intercostal muscles of his lungs from their fixed position (Edwards 1986). For this reason, many modern thinkers have hypothesized that Jesus likely died from asphyxiation while crucified. In volunteer re-enactment studies, however, respiratory distress was not consistently observed (Bergeron 2012). Forensic medicine expert, Frederick Zugibe, was known for his recent and humane crucifixion reenactments. He monitored volunteers as they were suspended from a replica cross. Zugibe's findings were obviously limited, as the subjects were not whipped, beaten, dehydrated, or actually fully crucified, but none of his volunteers experienced significant breathing difficulty during the experiment (Maslen & Mitchel 2006). Based on his findings, Zugibe concluded that hypovolemic shock caused Jesus' death, not asphyxiation (Zugibe 2005). This conclusion is consistent with conclusions drawn by other contemporary medical professionals.

As Jesus hung from the cross, bleeding profusely and unable to exhale, carbon dioxide begins to build up in his lungs. Oxygen levels in his blood decrease, which causes both a pericardial effusion and a pleural effusion, or fluid buildup around the heart and lungs (Shrier

2002). Jesus would have experienced a deep, crushing pain in his chest as the pericardium filled with fluid and began to compress his heart (Davis 1965). Given this physical evidence, Bergeron concludes that the ultimate cause of Jesus' death was shock, coupled with trauma-induced coagulopathy (TIC). Shock is a state of insufficient perfusion of vital organs, brought about by an intravascular volume deficiency and an imbalance of oxygen supply and demand in the blood (Bergeron 2012). As we have shown, Jesus' physical state at the time of the crucifixion is synonymous with a person going into shock. He had been deprived of fluids, sweated profusely from anxiety, lost a significant amount of blood, experienced great difficulty breathing, and likely developed pericardial and pleural effusions, causing an overall internal fluid imbalance. Bergeron points to traumatic hemorrhagic shock as a subtype of shock that likely affected Jesus. Hemorrhage is the most common cause of decreased circulatory volume, and was certainly something from which Jesus suffered during the Crucifixion. The effects of this kind of shock, including tissue ischemia, systemic inflammation, and coagulopathy can cause multi-organ system failure and cardiac collapse, leading to the patient's death (Bergeron 2012). Indeed, Brian S. Kauffman, MD, claims that decreases of oxygen consumption in patients with circulatory shock, like Jesus, directly correlate with patient mortality. The decline in oxygen consumption in hypovolemic shock is a result of a decrease in oxygen delivery (Kauffman 1964).

During shock, decreased circulatory volume and blood flow cause the heart to beat faster and constrict vascular beds, which only further reduces blood flow to bodily tissues. This tissue ischemia can cause tissues to swell, which can worsen hypoperfusion effects in the tissue, reducing blood flow even further. If untreated, this can lead to permanent cell disfiguration and tissue death. Ischemic tissue also produces lactic acid and free radicals, which cause localized toxicity and inflammation, inhibiting the normal functioning and lifespan of red blood cells

(Bergeron 2012, Bracci 1999). The metabolic acidosis brought about by tissue ischemia, in Jesus' case, would have been compounded in severity by respiratory acidosis. A buildup of acid in the body, coupled with prolonged hypoperfusion such as this, can lead to an irreversible state of shock, even "in spite of the best treatment efforts" (Bergeron 2012). If a person experiencing this kind of shock were given modern medical attention, he or she may initially appear to have become stabilized. However, it is likely that this person would later succumb to multi-organ system failure due to prolonged ischemia (Bergeron 2012). If this ischemia is coupled with coagulopathy, capillary leakage, and/or hypovolemia, death can come rapidly. This kind of acute, irreversible traumatic shock can lead to death within a few hours, and Jesus' unusually rapid death on the cross indicates this type of pathomechanism (Bergeron 2012).

A common complication of traumatic shock, described above, is trauma-induced coagulopathy (TIC). TIC refers to a loss of clotting ability in blood, brought about by a significant injury. It generally begins shortly after the person receives an injury, and makes fatality in the wake of the incident four times more likely (Bergeron 2012). TIC is likely to occur in the presence of shock, tissue injury, academia, and hypothermia – all of which Jesus suffered. In fact, when coagulopathy, hypothermia, and acidosis occur together, they have come to be called the "lethal triad" (Bergeron 2012). They lead to the progressive instability of clotting mechanisms, and have been associated with mortality rates nearing 60%. Bergeron insists that there are certainly treatments for the lethal triad, including thermoregulation, pH monitoring, and blood transfusions; however, these treatments are difficult to administer today, even in the most well prepared trauma centers. Jesus would have quickly died from the lethal triad, as he did not receive any treatment; his conditioned only worsened as he hung on the cross. The acidosis brought on by tissue ischemia, coupled with hemorrhaging from his extensive tissue damage,

would have led to a depletion of platelets and coagulation factors in Jesus' blood. The extent of tissue damage has been shown to directly correlate with the development and severity of TIC, and Jesus' tissue damage was severe. Bergeron insists that the loss of platelets from diffuse bleeding cannot be underestimated, and would have had disastrous effects (Bergeron 2012).

The third member of the lethal triad, hypothermia, while not as evident as coagulopathy due to profuse bleeding and acidosis due to tissue ischemia, was certainly equally as likely to have occurred. The enzyme reactions that are associated with clotting mechanisms function best at 35^{o}C. Jesus, having been stripped of his clothing and subject to early April temperatures in Jerusalem (8 – 14^{o}C on average, as cited by Bergeron and weather.com) likely did suffer from hypothermic effects. Hypothermia impairs platelet function in its patients, and activates both fibrinolysis and clot lysis. The latter two are a dangerous combination, as fibrinolysis prevents blood clots from forming and clot lysis breaks down clots that have already formed. These effects are only made worse by coagulopathy and acidosis, and it is understandable why this triad is considered "lethal" (Bergeron 2012). Even modern medical professionals would have found it difficult to treat Jesus' wounds, and Jesus received no medical care on the cross. He was left to die, and his injuries certainly killed him.

Given this medical evidence, let us return to the Swoon Theories. For Swoon Theorists, two of the most common controversies surrounding Jesus' death are the amount of time which it took for him to die, and the nature of the wound on his side when he was pierced with a spear. Hypovolemic shock, complicated by TIC, provides a scientific explanation for both of these phenomena, and supports the hypothesis that Jesus *did* in fact die. First, TIC would explain why it took Jesus mere hours to die instead of several days. The profuse tissue damage he was subject to, the amount of blood he lost, the buildup of acid inside his lungs and vascular system, and the

environment in which he died all point to the "lethal triad" of TIC. The lethal triad is difficult to cure with modern medicine, and Jesus did not have any medical attention. He was dehydrated and exhausted, fighting paralyzed muscles and intermittent asphyxiation, and he ultimately succumbed to hypovolemic shock. Regarding the wound in Jesus' side, many Swoon Theorists argue that, when his side was pierced, Jesus would not have been able to "bleed" unless he were still alive. Bergeron's explanation satisfies this inquiry as well. The "blood and water" which flowed from Jesus' side are a direct result of the pericardial effusion that had built up due to his lack of oxygen. The spear, when forced upward into his chest, would have first pierced the fluid filled pericardium and then the heart (Bergeron 2012). When the spear was withdrawn, the fluid released from the pericardium would have had the appearance of "water" and the heart would have been emptied of blood. In a healthy person, there are normally 20-30 cc's of fluid in the pericardial space; when the person suffers from a pericardial effusion, however, the volume of fluid surrounding the heart can reach up to 500 cc's, and it very likely could look like an outpouring of water if the pericardium were punctured (Madkour 2004).

Given the medical evidence surrounding the Crucifixion, it is logically impossible to claim that Jesus only "swooned" on the cross. The physical torment he endured before being nailed to the cross, and the subsequent cardiovascular complications he experienced, would have made survival impossible. The Swoon Theories tend to ignore the extent of Jesus physical injuries before the crucifixion, and generally make no mention of the medical complications of being nailed to a cross. As a result, they hold no merit as potential explanations for the events that transpired at the crucifixion. Based on the evidence given, Jesus certainly died on the cross. The ramifications of his death and subsequent resurrection are certainly profound, and remain controversial topics to this day. The fact that he died, however, cannot be logically disputed.

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