

# WE SHOULDN'T WAIT FOR HEAVEN: HOW HEAD/BODY TRANSPLANTATION CAUSES US TO REEVALUATE HALAKHIC CONCEPTIONS OF LIFE AND DEATH

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## ABSTRACT

In this article, the authors examine how the potential success of head/body transplantation raises questions as to how halakha—Jewish law and jurisprudence—might draw the line between determining whether a person is dead or alive. In presenting the primary Talmudic passages that refer to determination of life and death, and their discussion among halakhists and halakhic decisors, the authors show how the halakha might determine the demarcation between life and death as it applies to head/body transplants or potentially other innovations in medical technology.

**KEYWORDS:** transplantation, death, Jewish law

## PREFACE

In this article, we do not attempt to confront all or even many of the Jewish ethical implications of head/body transplants. Rather, our purpose is to consider what the potential success of such a transplant would mean for the current halakhic debate over how to determine death in a way that is coherent given the Jewish normative legal tradition and contemporary (or future) science. As such, this analysis is an ontological examination that has ethical ramifications. Methodologically, we assume that halakha—Jewish law and jurisprudence—is both a normative system as well as an ontological one, in that it demarcates categories of being which are presupposed when institutionalizing social patterns and behaviors.<sup>1</sup> By accepting halakhic principles and norms, one also accepts the way the halakha organizes society and the categories by which it functions. By examining the halakhic norms pertaining to the obligations and consequences that arise when a person is deemed alive or dead, and the practical ramifications between these two categories, we can infer how the halakha establishes the dividing line between life and death.

We present the primary Talmudic passages, and their discussion among halakhists and halakhic decisors, that refer to determination of life and death. We do not read these cases as

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1 Whether those categories reflect natural categories or are socially constructed is a question for a different article.

providing criteria for life and death. Rather, we understand them either as providing functional tests that indicate whether the person might still be alive or not<sup>2</sup> or as serving as examples where halakha has deemed that a person is dead even if there are indications to the contrary, such as the presence of movement.<sup>3</sup> By analyzing these passages, we show how the halakha might determine the demarcation between life and death as it applies to head/body transplants. In our review of the various Talmudic and halakhic sources we attempt to elucidate a position that is conceptually, scientifically, and hermeneutically consistent and that also expresses a halakhic view concerning the line between life and death that can account for the possibility of successful head/body transplants.

Through a review of the halakhic sources, we show that the halakhic demarcation between life and death depends on the assumption of whether the person's respiratory functioning<sup>4</sup> can continue independently or whether it can resume independent functioning after a period of interruption. Independent functioning in the halakhic sense means that the person's respiratory system continues on its own, or, if it receives mechanical assistance or even a different body through transplantation, the person consciously and voluntarily incorporates the mechanical assistance or different body into his or her identity and being.<sup>5</sup> If the person does not demonstrate consciousness, but his or her respiratory system continues to function independently or will do so in the future, then current respiratory activity should be seen as an indication that the person is still alive, even when the activity is assisted by mechanical or medical means. If the person does not demonstrate consciousness *and* he or she does not and would never be able to resume independent respiration, then there is no definite indication that the person is alive. Moreover, the external assistance should not be considered to be sustaining life function. Rather, it should be considered as simply maintaining physiological activity.<sup>6</sup>

Whether head/body transplants would be permissible under Jewish law would depend, among other factors, on the risk of the procedure and the probability of success, and halakhic analysis regarding the permissibility of the procedure would follow juridical reasoning that is common to

2 *Babylonian Talmud*, Yoma 85a.

3 *Mishnah*, Ohalot 1:6; *Babylonian Talmud*, Hullin 20–21.

4 The human respiratory system consists of a series of organs that take in oxygen and expel carbon dioxide. The respiratory system is part of a larger system that includes the circulatory system, where the two work to circulate blood and oxygen throughout the body.

5 The psychological process of how a person incorporates mechanical assistance or foreign biomaterial into their identity and personhood is the subject of a different essay.

6 With respect to the difference between activity and function, see, for example, Rabbi Shlomo Goren's distinction between cardiac activity and cardiac function. He writes, "With regard to the heart, we need to distinguish between two types of activity, functional activity and physio-biological activity. From the perspective of function, once the brain has ceased any activity, when it no longer receives any oxygenated blood from the heart, the heart has died functionally as well [i.e. lost its function]. For the heart is considered a [functioning] heart only when it functions as a heart, meaning it pumps oxygenated blood to all limbs of the body, including the brain. For that is the functional purpose of the heart, to send deoxygenated blood to the lungs and to take oxygenated blood from the lungs and send it to the brain and other organs. But when the heart ceases to perform its function in the body, even if it is still beating on its own, it cannot be considered a heart from that point on, but rather an individual organ." Shlomo Goren, *Torat ha'Refuah: mehkarim hilkhatiyim be-noš'e refu'ah* [The Torah/teaching regarding medicine: Halakhic studies on the topic of medicine], ed. Yisrael Tamari (Jerusalem: Ha-Idra Rabba, 2001), 57–78, at 63. All translations from the Hebrew are the authors'. Our interpolations (marked in square brackets) provide a comprehensible reading of the passage in English; the additional information (marked in parentheses) provides context or clarification for ease of understanding.

many other cases of transplantation. However, even if head/body transplants were not halakhically permissible, the halakha may nevertheless still provide analysis as to the ontological or categorical consequences if one were to undergo the procedure anyway. Halakhic decisors often discuss the ramifications of actions that are prohibited not only to understand the normative consequences, but also to provide clarity to social and conceptual boundaries.

## INTRODUCTION

In 2017, Italian neurosurgeon Sergio Canavero announced that he had been able to reattach the head of a cadaver to a cadaveric body by reattaching the spine, nerves, blood vessels, veins, and skin from the head to the body. His next step would be to perform the procedure on a brain-dead patient, and, if successful, he would then attempt the procedure on a live person.<sup>7</sup> Canavero, working with Ren Xiaoping and the Chinese government, call their program HEAVEN: The Head Anastomosis Venture, and they claim that the first human head transplant is imminent.<sup>8</sup> An example of a person for whom such a transplant might be intended would be an ALS patient with no body function who would want to transplant his head onto the body of a person whose brain was destroyed by a bullet but whose body is intact and healthy. Ethicists, neurosurgeons, and medical scholars have voiced ethical and clinical concerns over the research and its potential consequences.<sup>9</sup> Some bioethicists argue that the scientific and legal communities would never allow the pursuit of such an endeavor and ignore the possibility and potential ramifications that head/body transplants would be successful. However, others, such as Paul Root Wolpe, recognize the importance of being proactive in the discussion. Wolpe writes, “I disagree that bioethicists should ignore head transplants. Perhaps Canavero and Ren will not succeed in attempting a live head transplant this time around, yet they will undoubtedly not be the last to try, which makes it important to consider the ethical implications of such an attempt.”<sup>10</sup> Before considering the ethical implications, however, we have undertaken in this article to examine the ontological implications of how the halakha might determine the demarcation between life and death, if such an attempt were successful.

7 The idea of head transplants is not new. For a review of the history of the procedure, see Nayan Lamba, Daniel Holsgrove, and Marike L. Broekman, “The History of Head Transplantation: A Review,” *Acta Neurochirurgica* 158, no. 12 (2016): 2239–47.

8 See Brian Wang, “First Human Head Transplant Will Still Happen Soon Based upon Millions in Sunk Costs,” *nextBIGFuture* (blog), July 19, 2018, <https://www.nextbigfuture.com/2018/07/first-human-head-transplant-will-still-happen-soon-based-upon-millions-in-sunk-costs.html>.

9 Many (in truth, almost everyone) have criticized the HEAVEN team for not considering the social, legal, and ethical ramifications and potential harm this research would entail. For example, with transplants in general there are ethical concerns, such as who is entitled to a transplant, how organs or body parts should be procured and distributed, if transplantation should be voluntary or whether donors or their families can be compensated, as well as determining the probability of success or rejection of a particular transplant and the medical consequences it may have on the particular recipient. Also, the clinical consequences, in terms of whether the recipient of the “new” body would accept the transplant psychologically and physiologically are simply unknown. Moreover, given the proportions of what is donated and who is considered the recipient, the procedure raises social and moral questions regarding the limits of personal identity and legal conceptions of personhood.

10 See Paul Root Wolpe, “A Human Head Transplant Would Be Reckless and Ghastly. It’s Time to Talk about It,” *Vox*, June 12, 2018, <https://www.vox.com/the-big-idea/2018/4/2/17173470/human-head-transplant-canavero-ethics-bioethics>.

DEFINITIONS AND DETERMINATIONS OF DEATH

Before discussing how, or whether, the halakha defines when death occurs, the criteria it may use to establish the definition operationally, and the tests it may use to indicate that death has in fact occurred, it is first necessary to know that there is a difference between definitions, criteria, and tests. A definition of death is an explanation of the concept that makes its meaning explicit. For example, two prominent definitions of death found in the bioethical literature are the following: (1) Death is the permanent cessation of functioning of the organism as a whole. Despite the cessation of functioning of the organism as a whole, individual subsystems may continue to function.<sup>11</sup> (2) Death is the irreversible loss of that which is essentially significant to a species.

Once a person accepts a definition for death, then he or she must understand which criterion of death best fits the definition that was accepted. A criterion of death is a condition that shows that the definition has been fulfilled. Today, there are two main criteria to determine death, namely the cardiopulmonary criterion and the brain death criterion. According to the cardiopulmonary criterion, death occurs when there is a permanent loss of cardiopulmonary functioning. According to the brain death criterion, death occurs when there is a total and irreversible loss of whole brain functioning, including involuntary activity necessary to sustain life.<sup>12</sup>

Providing criteria and selecting tests that indicate that they have been satisfied are medical tasks. Providing a definition of death is a philosophical task, yet it also a legal one, especially since definitions of death have social and legal implications.

In the Jewish tradition, the main definition of life is ensoulment or possessing the spirit of life (*nishmat ruach*),<sup>13</sup> and the criterion by which to know that death has occurred (or that life has ceased) is the leaving of the soul or life force (*nefesh*) from the body.<sup>14</sup> However, because the soul or the life force is a spiritual entity, its departure cannot be empirically observed or clinically assessed.<sup>15</sup> Because the halakhic definition of death is not based on strict physiology, any physiological criterion can only serve as an indication that the soul may have left the body, but it cannot serve to establish it as fact. What this means is that one cannot know with factual certainty that a patient is dead. The halakha can only make legal presumptions

11 James L. Bernat, Charles M. Culver, and Bernard Gert, "On the Definition and Criterion of Death," *Annals of Internal Medicine* 94, no. 3 (1981): 389–94.

12 The President's Commission on Bioethics originally conceived of neurological criteria to determine death as an alternative criterion that would uphold the same physiological definition of death as that based on cardiopulmonary criteria. However, in light of findings of brain-dead patients who still demonstrated certain integrative functions, such as normal function of the liver, kidneys, cardiovascular and endocrine systems, wound healing and fighting of infections, successful gestation of a fetus, and sexual maturation of a child, among others, the commission changed its definition of death to maintain the validity of death based on neurological criteria. Instead of maintaining a physiological definition of death, in order to affirm that a person, who has lost neurological functioning to the point that meets the criterion of brain death, should be considered dead, the commission defined death as losing that which is essentially significant to the human species. See President's Council on Bioethics (US), *Controversies in the Determination of Death: A White Paper of the President's Council on Bioethics*, 2008, <https://bioethicsarchive.georgetown.edu/pcbe/reports/death/>.

13 Genesis 7:22; *Babylonian Talmud*, Yoma 85a.

14 Numbers 19:13; *Mishnah*, Ohalot 1:6; *Mishnah*, Shabbat 23:5.

15 See Rabbi J. David Bleich, who writes, "The traditional view is that death occurs upon the separation of the soul from the body. Of course, the occurrence of this phenomenon does not lend itself to direct empirical observation." J. David Bleich, "Establishing Criteria of Death," *Tradition: A Journal of Orthodox Jewish Thought* 13, no. 3 (1973): 90–113.

that the person is dead, though one can make assumptions with greater precision and accuracy as medical technology advances.<sup>16</sup>

The recognition that the soul's presence can only be observed indirectly through its influence on physical or physiological movement<sup>17</sup> should give rise to a larger concept—that for the Talmudic sages, death can only be inferred through the physical changes that we see occur after a person's soul has left (which would make those physical changes indications that the person has died) or be surmised to have left given the functioning state of the person (which would make those physical changes give rise to legal presumption that the person has died). Therefore, when Jewish bioethicists discuss the various positions found in the Talmud or among halakhic decisors on how to conceive when the moment of death has occurred, it would be more productive to understand them either as giving indications that death may have occurred or to establish a legal presumption of death rather than think of them as demarcating the line between life and death *in actu*. By conceiving these positions as indications or as legal presumptions, we are able to recognize that our empirical observations or legal pronouncements are only as accurate as the tools we use to measure them. Given more sophisticated tools, we may choose different indications to assume that death has occurred without being concerned that we are changing the halakhic definition or criterion of death arbitrarily.<sup>18</sup>

Currently, there is a debate among halakhic decisors regarding what signifies death that has become entrenched between two main positions. One position holds that irreversible termination of respiration is a definitive signifier that a person has died, and this can be determined by neurological criteria.<sup>19</sup> The other position holds that irreversible termination of cardiac activity (or irreversible cessation of vital motion) is the definitive signifier that a person has died.<sup>20</sup>

Despite this divide in positions, however, both sides agree that decapitation is a definitive signifier that a person has died, because it either serves as an independent signifier of death<sup>21</sup> or can be incorporated into their respective overarching criteria. For the former position, decapitation is a definitive signifier because a decapitated person can no longer breathe independently, and for the latter position, upon decapitation, the heart will stop beating within a very short time. However, if medical technological advances were able to sustain neurological activity and attach a head to a different body, and the attached head and body would be able to breathe and the heart would be able to beat, then decapitation would no longer signify death according to the two major positions of the debate.<sup>22</sup> This is not wholly far-fetched. For example, a recent paper

16 Also, according to halakha, death of a human being is not conceived as different than death of an animal, as seen by the many Talmudic sources which juxtapose questions of knowing when a human or an animal is dead for the sake of clarity and analysis.

17 The terms *physical* and *physiological* both refer to bodies; however, *physical* refers to the body itself while *physiological* refers to the body's functions.

18 Rabbi Shlomo Zalman Auerbach demonstrated this perspective in his decision to have Dr. Avraham Steinberg conduct an experiment to see whether a decapitated pregnant sheep can give birth to a healthy lamb. This experiment was meant to test whether the Talmudic passage in *Babylonian Talmud*, Arakhin 7a, which states that when a pregnant woman dies her fetus will die before her, still applies when medical intervention is used on the dead woman for the sake of delivering a healthy fetus.

19 This is the position of the Israeli Chief Rabbinate, Rabbi Moshe Feinstein, and R. Gedalia Dov Schwartz, among others.

20 This is the position of Rabbi Bleich, Rabbi Shlomo Zalman Auerbach, Rabbi Yitzhak Yaakov Weiss, Rabbi Shmuel ha-Levi Wosner, and Rabbi Eliezer Waldenberg, among others. However, Rabbi Shlomo Zalman Aurbach held that if every cell in the brain were definitively dead, the patient should be considered dead.

21 This is the position of Rabbi Moshe Feinstein. See *Igrot Moshe*, Yoreh Deah 2:174.

22 Because head/body transplants assume that neurological function would be maintained, the position of Rabbi Moshe David Tendler—that brain death constitutes death according to halakha—would not be a relevant position

described the potential use of an artificial blood perfusion system to maintain in part the lives of brain cells in decapitated pigs.<sup>23</sup> It is not unreasonable that science may develop technologies to maintain the brain’s functional properties even after decapitation.

Both sides of the debate rely on the position of Rabbi Moshe Sofer,<sup>24</sup> who provides a list of criteria that indicate that a person has died. He writes, “Anyone lying as a stone, with no heartbeat, and whose breathing then stops . . . all we have are the words of our holy Torah that he has died, and he should not be left unburied.”<sup>25</sup> In a situation where medical interventions are not used, termination of the heartbeat will quickly lead to termination of breathing, and vice versa. Yet the two conditions may not correlate when medical interventions are used. The introduction of medical technologies, such as respirators, force one to understand whether Rabbi Sofer’s list of indications are inclusive or conclusive. If inclusive, all three indications are necessary, regardless of order. If conclusive, Rabbi Sofer is providing the typical progression towards death, but the primary indication is the last one, namely cessation of respiration. If the former understanding is correct, then cardiac activity, even if it serves no function in maintaining independent respiration, is nevertheless indicative of life. If the latter, then respiration (whether that be independent or potentially independent) is indicative of life. It seems to us that the latter interpretation of Rabbi Sofer’s list is correct, as he continues to write, “For everything depends on respiration, as explained in Babylonian Talmud Yoma (85a) and ruled by Maimonides and the *Tur/Shulhan Arukh*.”<sup>26</sup> However, the position that holds that irreversible termination of cardiac activity (or irreversible cessation of vital motion) should be the indicator that death has occurred may still argue that if respiratory activity is still present, even if it is due to a mechanical ventilator, then the person should be considered as still alive.<sup>27</sup>

TALMUDIC CASES

There are several different cases presented in the Talmud that discuss either how to test whether someone has died or how to interact with and consider the ramifications of someone who has just died. In this section, we present the different Talmudic cases and analyze how they demarcate the line between life and death in order to apply those principles to the case of head/body transplants.

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to examine directly, since it assumes loss of neurological functioning rather than its continuance. However, as we analyze the various sources that are relevant to the discussion, the reader may investigate how our position might be in conversation with Rabbi Tendler’s position. For Rabbi Tendler’s view, see Fred Rosner and Moshe David Tendler, “Definition of Death in Judaism,” *Journal of Halacha and Contemporary Society*, no. 17 (1989): 14–31.

- 23 See Chia-Yi Hou, “Circulation and Cell Function Revived in Dead Pigs’ Brains,” *Scientist*, April 17, 2019, <https://www.the-scientist.com/news-opinion/circulation-and-cell-function-revived-in-dead-pigs-brains-65751>; John D. Loike and Alan Kadish, “Opinion: Test Brain-Reviving Technology in Infants First,” *Scientist*, July 9, 2019, <https://www.the-scientist.com/news-opinion/opinion-test-brain-reviving-technology-in-infants-first-66110>.
- 24 Rabbi Moshe Sofer (1762–1839) was one of the leading Orthodox rabbis of European Jewry in the first half of the nineteenth century.
- 25 *Hatam Sofer*, Yoreh Deah 338.
- 26 *Hatam Sofer*, Yoreh Deah 338.
- 27 In a separate article, we discuss the validity—conceptually and hermeneutically—of the concept of vital motion, most often associated with the position of Rabbi Bleich. In that article, we intend to show that vital and non-vital motion are not distinct halakhic categories. Rather, physical or physiological activity is understood in context as either meaningful or not, depending on whether it is assumed that the person or animal will continue living or not.

*The Avalanche Victim: Functional Tests to Determine Life and Death*

The Rabbis taught: [If, on Shabbat, a person is buried under rubble,] until what point does one check [to clarify whether the victim is still alive? They said: One clears] until [the victim's] nose. And some say: [One clears] until [the victim's] heart . . . Rav Pappa said: The dispute [with regard to how far to clear the rubble to check for signs of life applies when the digger begins removing the rubble] from below [starting with the feet] to above. But [if one cleared the rubble] from above to below, once he checked as far as [the victim's] nose he is not required [to dig further,] as it is written: "All in whose nostrils was the breath of the spirit of life" (Genesis 7:22).<sup>28</sup>

Given what we have stated above, the tests proposed in this Talmudic passage do not definitively presuppose criteria to determine whether a given physiological definition of death has been fulfilled or not. It is assumed that one cannot give a definition for death that entails wholly physiological criteria, but one must rely on what one sees to make a halakhic determination about how people should act. Also, in this case, there is a potential conflict of prescriptions, namely, acting to save a life and observing the prohibitions of Shabbat. With this in mind, one should not understand this passage as advocating for either a respiratory criterion of death or a cardiac criterion of death, but rather a discussion as to which test might be a better indicator of life or death.

Even if our understanding of biology and physiology has changed since the times of the Talmud, biological and physiological systems have not.<sup>29</sup> Therefore, when providing a coherent understanding of the Talmudic cases, of primary importance is the description of the state in which the person is and the status that the sages give him. The explanations for why such a state entails such a status can and should change through better medical understanding. For example, in the Middle Ages, the dominant view was that the heart was the organ of respiration, as taught by Galen and his followers. Today, we know that not only is the heart a part of the circulatory system, which works with the respiratory system to function, but it also has its own independent pacemaker, which allows it to beat as long as it receives oxygen.<sup>30</sup> For the purpose of understanding the disagreement in this passage, therefore, we do not need to debate whether the sages in fact thought that heart is the organ of respiration or that it is one component of a much larger process. The basic question is whether cardiac activity is a meaningful indication that the person is still alive or not.

According to Rav Pappa, there is no disagreement among the rabbis that breathing through one's nose is a sufficient sign to indicate whether the victim is alive or not. If one uncovers a victim's head and can see that he is breathing, then one must desecrate Shabbat to save him. If the victim is not breathing, then there is no indication that he is still alive. He must therefore be considered as or presumed to be dead, and one must not desecrate Shabbat. Disagreement, according to Rav Pappa, only occurs if the victim is uncovered feet first and one reaches his heart before his nose.<sup>31</sup> In this case, one position holds that cardiac activity is a sufficient sign to indicate either life or death, and the other position holds that it is not.

<sup>28</sup> *Babylonian Talmud*, Yoma 85a.

<sup>29</sup> See *Igrot Moshe*, Yoreh De'ah 2:146.

<sup>30</sup> A heart can be removed from a body, placed in saline solution, given oxygen, and still continue to beat.

<sup>31</sup> This is not the only place in the Talmud where Rav Pappa limits disagreement regarding signs indicating life and death to a disagreement over whether one checks starting from the feet or from the top of the head. See *Babylonian Talmud*, Nidda 23b–24a.

The position that holds that checking for a heartbeat is sufficient can be understood as follows: If one finds a heartbeat, there is an indication that the person is still alive,<sup>32</sup> and one should continue to rescue the person as long as the assumption that the victim might still be alive holds. If one does not find a heartbeat, one does not need to assume that the person might still be breathing. There is no indication that the person is alive that warrants desecrating Shabbat to save his life.

Rabbi Shlomo Yitzchaki (Rashi)<sup>33</sup> comments that the reasoning for the position that one should continue to unbury the person to check the nostrils for signs of breath is that “sometimes life-force is not recognizable via the heart but it is recognizable via the nose.”<sup>34</sup> This can be interpreted in two ways, both of which could fit with Rashi’s comment. The first is that checking the person’s chest for a heartbeat may not be sensitive enough of a test. Therefore, one should check for respiration. Since breathing will cease very soon after cardiac arrest,<sup>35</sup> if the person is still breathing then his or her heart is probably still beating. According to this interpretation, respiration is an indirect indication of life, since it is an indication of cardiac activity which the primary indication of life.<sup>36</sup> This interpretation of Rashi’s comment, however, only applies if one does not find a heartbeat when uncovering the body feet first. Only then should there be a disagreement according to Rav Pappa. If one would find a heartbeat, even when uncovering the body feet first, there should be no disagreement between the two positions; both positions would agree that a heartbeat indicates that the person is still alive, just as there is no disagreement according to Rav Pappa that one need only check for breathing when one uncovers the head first.<sup>37</sup> However, Rav Pappa maintains that there is general

32 See Rashi, s.v. “amar Rav Papa,” who explains the two positions as follows: “For one says, ‘One can distinguish by the heart if there is life in him, since his soul beats there.’ And one says ‘Until the nose since there are times when life is not clear[ly indicated] in the heart, but it is clear through the nose.’”

33 Rabbi Shlomo Yitzchaki (1040–1105), was a medieval French rabbi and author of a comprehensive commentary on the Bible and Talmud.

34 Rashi, *Babylonian Talmud*, Yoma 85a, s.v. “ad hotmo.”

35 This is not always the case, and it depends on the type of trauma incurred. Breathing can also cease before cardiac activity has stopped.

36 Even through this interpretation, cardiac activity may not be a primary indicator in and of itself but rather it should be seen as an indirect indicator because it implies circulation of oxygenated blood. See articles by Rabbi Hershel Schachter, who writes that circulation is the definition of life: Hershel Schachter, “Determining Death,” *Journal of Halacha and Contemporary Society*, no. 17 (1989): 32–40; Hershel Schachter, “B’dine Met v’Gavra Katila [Regarding the laws of a dead person and a person certain to die],” *Assia*, no. 49/50 (5750/1989–1990): 119–37.

37 The Jerusalem Talmud records the debate differently. “[If a person is buried under rubble,] until what point does one check [to clarify whether the victim is still alive]? There are two positions. One said: [One clears] until [the victim’s] nose. The other says: [One clears] until [the victim’s] navel (*tibbuvo*). According to the person who says, ‘Until his nose,’ the reason is that he is *kayyam*. According to the person who says, ‘Until his navel,’ the reason is that he is *rabuntrakin*.” *Jerusalem Talmud*, Yoma 8:5. Rabbi Moshe Margalit explains the difference between *kayyam* and *rabuntrakin* as follows: “They are not arguing. The one who says, ‘Until his nose,’ is referring to a person who is *kayyam*, meaning he is strong and firm and one can sense through the nose whether the person has life. And the one who says, “Until the navel,” refers to someone who is soft (*rakin*), meaning that he is soft to the touch and one cannot sense through the nose. So, one checks until the navel for perhaps one can still sense if he has life. See Moshe Margalit, *Pnei Moshe, Jerusalem Talmud*, Yoma 8:5.

There are two major points to gain from the Jerusalem Talmud. First, the spot to check is the navel (*tibbuvo*) and not the heart. This difference has led some to argue that the debate is not about cardiac activity versus respiratory function, since checking the navel would be for indications of respiration and not for a heartbeat in particular. However, one can also reason that the Jerusalem Talmud and the Babylonian Talmud are in disagreement as to what constitutes a realistic indication of life, movement of the torso or cardiac activity.

Second, there seems to be no reference to the direction from which the victim is uncovered; the disagreement is to the condition of the body and the ability to check specific parts of the body. In this light, it seems that any



disagreement over whether to check the heart or the nose when uncovering the feet first; he does not limit the disagreement to only when one cannot find a heartbeat.

The second interpretation of Rashi's comment is as follows: The heart can continue to beat for up to five minutes after a person stops breathing. As such, even if a person does find a heartbeat, it may still not be a sufficient indication of life. Therefore, when uncovering the feet first, checking for the heart is not a sufficient test, since the presence of a heartbeat may still not indicate whether the person is breathing or not. One must continue to uncover the person's nose until he or she can check for respiration. In this interpretation, respiration is a direct indication of life, and it takes primacy over that of cardiac activity.

Notwithstanding Rav Pappa's understanding of the disagreement, the halakha follows the opinion that one must check the buried victim's nose, regardless of the direction from which one uncovers the body. Maimonides rules, "When an avalanche has fallen, and there is a doubt whether or not it has fallen over a person, it may be cleared. If the person was discovered to be alive, but was crushed [by the fallen debris] to the extent that it is impossible that he will recover, [the debris] may be cleared and the person taken out to enable him to live [however] long he does. They examine until they [reach] his nose and [if they] do not detect a soul (*velo matza'o bo neshamah*) in him, he should be left there, for he has already died."<sup>38</sup> One should note, however, that in his commentary on Mishna Yoma 8:5, Maimonides writes, "If they reach the nose and do not detect him breathing (*velo matza lo neshimah*), it is prohibited to continue digging, for he is certainly dead."<sup>39</sup> Maimonides continues in his commentary that the reason he should be left alone is because the prohibition to leave a corpse exposed is overridden by the prohibition of violating Shabbat laws.<sup>40</sup>

Rabbi Sofer qualifies Maimonides's ruling cited above by interpreting it in light of his ruling in *Hilkhot Avel* regarding a *goses*. There Maimonides writes, "A *goses* [person in his death throes] is considered as a living person with regard to all matters . . . One who touches him is considered as shedding blood. To what can the matter be compared? To a candle that is flickering, were a person to touch it, it will be extinguished. Similarly, anyone who closes a dying person's eyes as his soul expires is considered as shedding blood. Instead, they should wait some time lest he has fainted."<sup>41</sup> According to Rabbi Sofer, in the case of the avalanche victim, even if one does not find the victim breathing, one should nevertheless not declare him dead until after sufficient time has elapsed to preclude a mistaken declaration. He writes, "This is implied in what Maimonides wrote, 'One who closes the eyes [of the person] as he is dying is as if shedding blood. Instead, one should wait a bit since perhaps he has only fainted.' It would have been incumbent on him to tell us

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movement that one can detect should be seen as an indication of life. Rashi may have understood the passage in the Babylonian Talmud in a similar way as the Jerusalem Talmud. The disagreement is based on where one can effectively check for signs of life or not. If this were the case, however, the disagreement would still only have occurred in a situation where the person was *kayyam* (firm), since it would be difficult to perceive a heartbeat or movement in the person's navel, when the person was uncovered feet first. It would not have applied when the person was *rabun/rakin* and one could detect signs of life from movement in the navel. Because Rashi does not make that distinction, it is difficult to understand his commentary as taking the Jerusalem Talmud's disagreement into account. Moreover, the major post-Talmudic halakhic authorities who ruled on this passage did not account for the passage in the Jerusalem Talmud in their decision.

38 *Mishne Torab*, *Hilkhot Shabbat* 2:18–19. Unless otherwise noted, citations to Maimonides are to the *Mishne Torab*.

39 Maimonides, *Commentary on Mishna*, Yoma 8:5.

40 Maimonides, *Commentary on Mishna*, Yoma 8:5. He affirms this ruling in his *Commentary on Mishna*, *Shabbat* 23:5.

41 *Hilkhot Avel* 4:5.

when the soul departs and to quantify and specify how this is determined. Rather, he must have been relying on what he wrote in *Hilkhot Shabbat* (2:19) with regard to a collapsed building, that one checks his nose, and that is where one can determine if his soul departed. It is regarding this that he wrote that one should wait a bit in case he only fainted, and only then may one close the eyes.”<sup>42</sup> Regardless of how long one should wait to determine whether the person has in fact died or has simply fainted, however, the purpose of waiting is to make sure that one has inferred correctly that the person is in fact dead given the imprecision of testing the victim’s nostrils.

Rabbi Yosef Karo<sup>43</sup> rules regarding the avalanche victim, “Even if [the rescuers] found him crushed [in a manner in which] he can only live for a short while (*she’eimo yakhol libyot ela lefi sha’ah*), we must [continue] recovery effort and check until his nose. If [the rescuers] do not sense life in his nose, then he is certainly dead, and it does not matter whether they reached [the victim’s] head or feet first.”<sup>44</sup> In his *Beit Yosef*, Rabbi Karo writes that the rule is according to the one who holds “until the nose” since it is a case of doubt, and in cases of doubt where saving a life might be possible, we rule leniently. The implications to this understanding are that (1) if the rescuers reached the feet first, *whether they did or did not find a heartbeat*, it would be a case of doubt until they reached the nose. Their examination of the nose would eliminate the doubt. (2) If they reached the head first and *did not find him breathing*, there would be no doubt as to whether the victim was alive or not, even if they could find a heartbeat if they transgressed and continued their rescue efforts. Rabbi Karo’s understanding of the Talmudic passage thus accords with our second interpretation of Rashi’s comment discussed above.

The halakhic literature on this Talmudic passage emphasizes the point that a sign that indicates whether life is still present or not should not be equated with a criterion to determine life or death. Rather, it should be seen as a test that can imply whether a person is still alive or not. It may be possible that the person to whom the Talmudic passage refers is still alive, yet given the technology of the times, there are no better tests to determine if such is the case. He is therefore deemed to be dead, even if he might not be dead in actual fact at the moment one stops trying to rescue him or her. Just to be clear, one should not think that death is simply a matter of futility, meaning that a person is deemed dead whenever there is no means to improve the patient’s condition. Futility, in general, may legitimize withholding certain treatments or withdrawing certain impediments to the dying process so as to allow a person to die, but futility itself does not determine whether a person is dead or not. What this Talmudic passage shows is that irreversibility of a given systemic function may give reason to deem a person dead. Yet reversibility is dependent on both the physical condition of the person and the efficacy of current medical technology.

Therefore, if there were means to sustain the victim’s life, even if he or she were not breathing at the moment, one would be obligated to attempt to do so, despite the ruling of the Talmud and halakhic decisors. According to Rabbi Shlomo Zalman Auerbach,<sup>45</sup> when doctors can give the victim CPR or other interventions, one must try to save the person on Shabbat even if he is not currently breathing, as long as there is a chance to save him.<sup>46</sup> As such, tests for breathing may no longer be valid indications of life, if there exists other tests that can indicate whether life is present (and can be sustained) or not. Rabbi Shlomo Zalman Auerbach writes this explicitly: “It is clear in

42 *Hatam Sofer*, Yoreh Deah 338.

43 Rabbi Yosef ben Ephraim Karo (1488–1575) is the author of the *Shulhan Arukh*, which is considered one of the most authoritative halakhic codes.

44 *Shulhan Arukh*, Orakh Hayyim 329:4.

45 Rabbi Shlomo Zalman Auerbach (1910–1995) was a renowned Orthodox Jewish rabbi who lived in Jerusalem.

46 *Minhat Shlomo* 86:5.

my humble opinion that in our day it is impossible to determine that an individual has already died without using the newest technologies that determine the border between life and death. Heaven forbid that we would only rely upon signs of respiration and the like and ignore other indicators."<sup>47</sup> Consider, for example, Christopher Reeves, who was considered alive, and rightfully so, when he could not breathe independently. He could only breathe via a ventilator and, after undergoing diaphragm pacing via laparoscopy, only with the assistance of a control that sends electrical signals to the diaphragm. Similarly, people, like former vice president Dick Cheney, who receive a left ventricular assist device, are very much alive, even when they have no cardiac activity or pulse.

### *Cases of Trauma*

As seen above, the passage in the Babylonian Talmud Yoma regarding the avalanche victim should be read as prescribing functional tests that could indicate whether the person is still alive or not. The passage in the Babylonian Talmud, Tractate Hullin, and the Mishna in Ohalot regarding various cases of traumatic injury, on the other hand, should be seen as demarcating life and death legally rather than describing actual fact, due to the impossibility of knowing with certainty when a soul leaves a body upon decease. The similarity between these passages and the passage in the Babylonian Talmud Yoma is that what is at stake for all of them is not to arrive at scientific, ontological categories. Rather, the purpose of the discussion is to establish to what extent one legal obligation overrides another or at what point does a legal consequence occur or not. In the passage in Babylonian Talmud Yoma, the sages attempt to resolve the tension between the obligation to save a life and the obligation to refrain from activities that are prohibited on Shabbat. Saving a life, even if the situation lends itself to doubtful success, overrides Shabbat prohibitions, but Shabbat prohibitions cannot be overridden if the ability to save a person's life is not present at all.

In the passages in Hullin and Ohalot, the sages attempt to determine when to establish that a given person or animal begins to impart ritual impurity, which typically arises contemporaneously with the person's or animal's death.<sup>48</sup> These cases challenge the clear boundary lines between life and death, since they are cases where the person or animal imparts ritual impurity even when they show signs, such as movement, that may seem to indicate life. The cases that the passage in Hullin discusses are as follows: when a person's backbone is broken together with most of the surrounding flesh, when a person is torn apart like a fish (from his back), decapitation, and when a person is cut in half at his stomach. The cases mentioned in Ohalot are decapitation, a *goses*, and a *meguyyad*, the definitions of which we explain below. For the purposes of our analysis, we discuss only the cases of a broken backbone, decapitation, a *goses* and a *meguyyad*.<sup>49</sup>

47 *Minbat Shlomo* 86:5.

48 The comparisons between humans and animals in these discussions demonstrate that even while the Jewish tradition maintains that humans are qualitatively different from animals, death for both humans and animals occurs in the same ways.

49 The indication that one has died when flayed like a fish and cut in half from one's stomach can be explained by the fact that it would constitute such a breach in the physiological integrity of the body that without medical intervention proper functioning of the body for the purpose of maintaining life would cease. Whether from exsanguination or irreversible termination of circulation of oxygenated blood or something else makes no difference; the key factor is that the functioning of the person's organ systems necessary to maintain life have ceased. The interest in discussing the indication of death when a person's backbone is broken together with most of the surrounding flesh, on the other hand, is because it is not as obvious that proper functioning of the body for the purpose of sustaining life has ceased. Our interest in discussing decapitation is because the article is about head/body transplants.

A BROKEN NECK

The Talmud records the position of Zeiri, who states that if the back of an animal’s neck is broken with the majority of the flesh surrounding the spinal column removed, the animal should be considered a *nevelah* (carcass),<sup>50</sup> even if the animal is still moving.<sup>51</sup> If the animal’s neck is broken, but the majority of the flesh surrounding the spinal column has not been removed, then the animal is considered to be still alive.

The Talmud continues to record the statement of Rav Yehudah in the name of Shmuel who provides a similar indication of death for a human being, “If [a person’s] neck is broken together with most of its flesh, the person contaminates an *obel* (tent) through ritual impurity conveyed through the presence of a corpse in the enclosed tent.”<sup>52</sup> Yet, Rav Yehudah makes a distinction between young and elderly individuals, adding, “And if you will ask about the incident with Eli (the Kohen Gadol), where he died when his neck was broken but without the greater part of the flesh [removed], he was old, so it was different.”<sup>53</sup>

Zeiri’s teaching regarding the broken neck is compared in the Talmud to *melika* (killing a bird by severing the spine through inserting one’s thumbnail through back of its neck) and *shehita* (killing an animal through ritual slaughter by severing the trachea and esophagus opposite the cervical column). One can, therefore, assume that the break in the spinal column to which Zeiri and Rav Yehuda refer occurs at the nape opposite the throat in the area where one would be able to sever the trachea and esophagus.<sup>54</sup> Based on this, we can infer that Zeiri’s and Rav Yehuda’s indication of death is the complete severance of<sup>55</sup> or severe damage to<sup>56</sup> the spinal cord through the breaking of the vertebrae in the cervical spine (C1–C7).<sup>57</sup> This can also explain

50 A *nevelah* is any dead animal that has died as a result of any process other than valid ritual slaughter.

51 *Babylonian Talmud*, Hullin 20b; Rashi, *Babylonian Talmud*, Hullin 20b, s.v. “nevelah.”

52 *Babylonian Talmud*, Hullin 21a.

53 *Babylonian Talmud*, Hullin 21a.

54 *Babylonian Talmud*, Hullin 19b; Hilkhoh Maaseh Korbanot 6:23; Hilkhoh Shehita 1:7; *Shulhan Arukh*, Yoreh Deah 20:1.

55 See *Tosafot*, Hullin 32b, s.v. “ve’lihshov”; *Taz*, Yoreh Deah 27; *Pleiti*, Yoreh Deah 27; *Responsa Yehuda Ya’aleh*, Yoreh Deah 70.

56 There are those who do not interpret Zeiri’s and Rav Yehuda’s ruling as referring to severing the spinal cord through breaking the cervical spinal column. Maimonides, Hilkhoh Shehita 3:19, and *Tur*, Yoreh Deah 27, refer simply to breaking the back of an animal’s neck, including the majority of the flesh surrounding the spinal column, without mentioning the spinal cord. This may lead one to infer that Zeiri’s case is one where the spinal cord is either intact or only partially damaged. See *Teshuvot Hakham Tzvi*, 28. Also, *Aruch HaShulhan*, Yoreh Deah 27, brings both the interpretation that the spinal cord has been severed and the interpretation that it has not.

57 Rabbi Bleich interprets these cases as either severance of the spinal column in the thoracic area together with severance of the trachea and the esophagus in their entirety or severance of the spinal column in the thoracic area coupled with perforation of the major portion of both the trachea and the esophagus. J. David Bleich, “Of Cerebral, Respiratory and Cardiac Death,” *Tradition: A Journal of Orthodox Jewish Thought* 24, no. 3 (1989): 44–66, at 61n4.

However, it is difficult to conclude that this is a proper interpretation of Zeiri’s claim for two reasons. First, physiologically, it would be difficult to contend that Zeiri is referring to damage to the thoracic area rather than the cervical area, since the trachea and esophagus are only present in the upper part of the thoracic spine. Lower down, the esophagus transitions to the stomach, and the trachea divides into the left and right bronchi and then branch further. It would therefore be very unlikely that a severance of the thoracic spine would also lead to severance or perforation of both the trachea and the esophagus.

Second, hermeneutically, Zeiri’s comment does not seem to indicate that severance of the trachea and esophagus are also required. Even though the Talmudic passage initially equates Zeiri’s statement with that of Rabbi Hisda, “We have also learnt the same: If one nipped off [the head of a consecrated bird] with a knife, the carcass,

why there is a difference between a young person and an elderly person. The difference between a young person and an elderly person with respect to a broken neck is that for a young person, the muscle tissue and ligaments that are not severed still keep the vertebral column in place even when the neck is broken; therefore, the tissue must also be severed in order for the broken spinal column to lead to severance of, or severe damage to, the spinal cord. For an elderly person, however, the muscle tissue and ligaments that keep the vertebral column in place are much weaker and will be less likely to protect the spinal cord when the spinal column is severed. The spinal cord of an elderly person is more likely to suffer severe damage when the spinal column is broken, even when the majority of the neck tissue is not severed along with it.<sup>58</sup>

For the sake of legal consistency, this interpretation of Zeiri's position must be reconciled with a statement in a Mishna elsewhere in Tractate Hullin, which states that breaking the spinal column and severing the spinal cord renders an animal a *treifa* and not a *nevelah*.<sup>59</sup> A *treifa* is an animal

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whilst in the gullet [of the person eating the dead bird], renders clothes [of the person eating the bird] unclean," the ensuing Talmudic passage disregards this assumption. The passage continues:

When Rabbi Zera went up [to Israel] he found Rabbi Ammi sitting and reciting the above statement [of Ze'iri], and at once put to him the question: "Why proceed with the nipping if it is already dead?"

He was astounded for a moment, but then replied, "Read [in the text]. This is what he does: He cuts [with his finger-nail] the spinal cord and the neckbone without cutting through the major portion of the surrounding flesh." The same is taught [in the following braita]: How must he [the priest] nip off [the head] of the sin-offering of a bird? He cuts [with his finger-nail] the spinal cord and the neckbone without cutting through the major portion of the surrounding flesh, until he reaches the gullet or the windpipe. On reaching the gullet or the windpipe he cuts through one of them or the major portion of one of them, and then cuts through the major portion of the surrounding flesh. In the case of a burnt-offering he cuts through both, or the major portion of both, of these organs. (*Babylonian Talmud*, Hullin 21a)

Rabbi Bleich interprets the debate about whether one cuts through both organs or the majority of both organs as referring to the statement of Zeiri. However, Zeiri's statement should be compared to the statement "He cuts [with his finger-nail] the spinal cord and the neckbone without cutting through the major portion of the surrounding flesh, until he reaches the gullet or the windpipe." For Zeiri, if this occurs, and the majority of the neck's flesh was also torn, the animal is rendered *nevelah*. Otherwise, Zeiri's answer to the question, "Why proceed with the nipping if it is already dead?" does not make sense. As such, Zeiri's position has no reference to severing the trachea or esophagus.

- 58 Older individuals are more likely to have low-velocity mechanisms of injury, such as those that occur due to falling (as was the example of Eli), and these types of injury are more likely to result in upper cervical spine injury than lower cervical spine injury. For example, the most common cervical spine injury seen in geriatric patients is an injury at C2, followed by injury at C1. Damage is most severe when it occurs in the high cervical spinal cord, since it typically includes paralysis, such as quadriplegia, and inability to breathe. The higher occurrence of these types of injuries for geriatric patients is due to the higher occurrence of other pathologies, such as arthritic changes and cervical canal stenosis. The elderly are also more likely to have metastatic spinal tumors and decreased bone density related to aging. Rebecca Jeanmonod and Matthew Varacallo, *Geriatric Cervical Spine Injury* (Treasure Island: StatPearls Publishing, 2019) (last updated March 26, 2020), <https://www.ncbi.nlm.nih.gov/books/NBK470375/>.

It is possible to understand that Rav Yehudah (in the name of Shmuel), who said that the case of Eli was different because he was elderly, was explaining why Eli in fact died when his neckbone was broken even without the major portion of the surrounding flesh having been cut, without making a categorical distinction between the ways in which elderly versus younger people die. In other words, Rav Yehuda was not establishing the presumption that that elderly die on a regular basis even without major soft tissue damage. He was simply saying that the elderly might be an exception to the general presumption that people who fall and break their neck will survive if the majority of the surrounding flesh is not severed.

- 59 *Babylonian Talmud*, Hullin 42a.

that is presumed to die in a relatively short period of time (it is not dead at the moment). The Mishna also does not make any distinction between young and old animals.<sup>60</sup>

This seeming contradiction is resolved when one considers that Zeiri's statement and the Mishna are discussing severance or damage to the spinal cord in different regions of the spine. For example, Rabbi Yisrael Belsky has stated that severing the spinal cord causes paralysis, while severing the meninges or liquefaction of the spinal cord can cause fatal infection. The infection is what renders the animal a *treifa*. Paralysis, on the other hand, can be fatal, when it occurs at or above the fifth cervical vertebra (C<sub>5</sub>), precisely the location for *shehita* and *melika*, yet an animal can survive from paralysis caused by severance of the spinal cord in the thoracic spinal column.<sup>61</sup> Zeiri's ruling therefore does not contradict the subsequent Talmudic ruling; rather, it refers to a different injury. The reason why paralysis can be fatal when it occurs at or above the fifth cervical vertebra (C<sub>5</sub>) is that it will cause cessation of respiration and the animal, or person, will die from asphyxiation.<sup>62</sup>

If it is correct that Zeiri and Rav Yehuda are describing a situation where a person cannot breathe due to the severance of, or damage to, the spinal cord in the region that controls breathing, then their indication of death aligns with the discussion in Yoma. Moreover, because severance of the spinal cord alone, without severance of the trachea, indicates that the person is dead due to his or her inability to breathe, then irreversible cessation of respiratory functioning, regardless of its cause, is an indication of death, even if the person is still moving. Cardiac activity would not be a determinative indication of continued life in this case, just as it is not in the case in Yoma, since a person's heart will continue to beat even after the person suffers from such a spinal cord injury. Similarly, if the carotid arteries are still intact, which is a strong assumption since they are located in the anterior and not the posterior portion of the neck, then one need not presume that the animal or person dies of exsanguination or of lack of circulation of blood to the brain (due to lack of blood flow rather than termination of respiration).

The Talmudic passage does not differentiate between humans and animals who were victims of these various fatalities even if the victim is still moving, yet Maimonides seems to make distinctions between humans and animals in this regard. For example, with respect to humans, Maimonides writes, "A corpse does not impart ritual impurity until the person actually dies . . . If his backbone is broken together with most of the surrounding flesh, he was torn apart like a fish from his back, he

60 The subsequent Talmudic discussion on that Mishna concludes by ruling that the halakha follows the opinion that the majority of the spinal cord must be severed to render an animal a *treifa*, yet the primary concern of the discussion regards whether the majority of the meninges surrounding the spinal cord has been severed rather than focusing on the spinal cord itself. Whether the spinal cord itself has been severed or not is of no concern if the meninges were intact. See Hilkhot Shehita 9:1; *Shulhan Arukh*, Yoreh Deah 32:1. If the spinal cord has liquefied to the point where it would "pour out like from a jug" if the meninges were punctured, the animal is still only considered a *treifa*; it would not be a *nevelah*. See *Babylonian Talmud*, Hullin 45b; Hilkhot Shehita 9:2; *Shulhan Arukh*, Yoreh Deah 32:2. The reason why the animal would be considered a *treifa*, is either the probability that the meninges will eventually become severed as well or because liquefaction is a greater blemish than severance of the spinal cord. See Rashi, *Babylonian Talmud*, Hullin 45b, s.v. "mipnei kevodo." Regarding the probability that the meninges will eventually be severed as well, however, is very difficult to contend on a practical basis, since, if the meninges remain intact after the initial trauma, they will not be subsequently severed unless there is a lot of movement between the two edges of the fracture which would cause them to tear, which is unlikely.

61 Yaakov Dovid Lach, *Sefer Temune ḥol/Chullin Illuminated* (Brooklyn: Hamesivta Publications, 2003), 157.

62 The innervation of the diaphragm, which is the main muscle of respiration, comes via the phrenic nerve, which in humans exits the spinal cord between C<sub>3</sub> and C<sub>5</sub>, so damage at C<sub>5</sub> or above is likely to affect breathing. It is not uncommon for spinal cord damage to ascend after trauma, so that that an injury at C<sub>5</sub> could cause delayed difficulty breathing, even if it was not a problem initially.

was decapitated, or he was cut in half from his stomach, he imparts impurity, even though some of his limbs are still making convulsive movements (*merafref b'echad m'eivaraiu*).<sup>63</sup>

However, when discussing the same cases with respect to animals, Maimonides makes significant changes. In one place, he writes, “[I]f [the animal’s] backbone was broken together with the majority of the meat, its back was ripped open like a fish, the majority of the windpipe was severed, or the gullet was perforated in a place fit for slaughter, it is considered as a *nevelah* while alive (*nevelah m'hayyim*) and slaughter will not be effective with regard to it.”<sup>64</sup> In another place, he writes about the same cases,

When a non-kosher domesticated animal or wild animal is slaughtered, it does not impart the impurity of a carcass as long as it is in its death throes unless its head is cut off . . . If one divides an animal in half or one removes its thigh and its inner cavity, it is considered as a *nevelah* and it imparts impurity when carried and when touched, even though it is still alive (*af al pi she'hee adayin b'hayyim*). Similarly, if it was ripped apart from its back or its backbone was broken and the majority of the meat around it severed, it is considered as a *nevelah* in all contexts.<sup>65</sup>

For the animal, it seems that movement indicates that it is still alive, yet we nevertheless deem the animal dead for the purpose of its imparting ritual impurity conveyed by a carcass (*tumat nevelah*), yet for humans, movement is not considered an indication of life. Human movement is simply considered the convulsive movements of a corpse.

The distinction Maimonides makes in these rulings is not that humans are certainly dead even though their corpses may still be moving while animals are only deemed dead, since their movements indicate the contrary. Rather, both humans and animals are deemed dead in these cases. Once deemed dead, any movement either by a human or an animal, would not have any halakhic meaning in terms of indicating life. The difference between the rulings is based on other considerations regarding the ritual impurity, not the legal categorization of death. For potentially kosher animals, one can still ritually slaughter the animal while it is still moving. One may then erroneously think that the ritual slaughter in fact killed the animal, making it a *treifa* (in this context, *treifa* would mean an animal that would not have been able to live if it were not ritually slaughtered) rather than a *nevelah*, and therefore the animal should not impart *tumat nevelah*.<sup>66</sup> Maimonides, therefore, rules explicitly that once the animal is deemed dead, it is a *nevelah*, even if it still shows seeming indications of life (that is, movement). He does this in order to preclude one from having the erroneous idea that ritual slaughter can be effective to prevent the animal from conveying impurity. This consideration would not arise in the context of human beings. He therefore does not need to account for it.

Maimonides’s position is therefore consistent for both humans and animals; in both cases the victims of these injuries are deemed dead, and any movements they may show are not interpreted to indicate anything to the contrary. Rabbi Yaakov ben Asher<sup>67</sup> in the *Tur*, Rabbi Yosef Karo, and Rabbi Yechiel Michel Epstein<sup>68</sup> seem to understand Maimonides and the Talmudic passage in the same way, since they all write with respect to a person who suffers one of these fatalities, “even

63 Hilkhhot Tumat Met 1:15.

64 Hilkhhot Shehita 3:19.

65 Hilkhhot Sha'ar Avot HaTumah 2:1.

66 *Maaseh Rokeach*, Hilkhhot Shehita 3:19.

67 Rabbi Yaakov ben Asher (1269–1343) was a well-known rabbi in the Holy Roman Empire and Spain.

68 Rabbi Yechiel Michel ha-Levi Epstein (1829–1908) was a rabbi in Lithuania.

though he is still alive, he is considered as if dead.”<sup>69</sup> According to this understanding, it seems that despite the fact that the person still shows indications of life, as demonstrated by his convulsions, these situations render a person to be deemed legally dead, and we should understand that any movement is not halakhically significant. Through this view, the legal determination of death may not be a description of reality; rather, it is used to set limits to people’s obligations to the victim and to establish clear boundaries for legal consequences when there is ambiguity. Also, in line with our discussion of the passage in the Babylonian Talmud Yoma, given today’s medical technology, if it is possible that a person can recover through treatment, even from spinal cord trauma, we would not consider such a person to be dead.

### Decapitation<sup>70</sup>

The Mishna in Ohalot states, “A human does not impurify [others] until his soul (*nafsho*) leaves him. And even a *meguyyad* or even a *goses* obligates in or exempts from levirate marriage and qualifies or disqualifies one from eating Terumah. And so, too, domestic or wild animals do not impurify until their souls (*nafsham*) leave them. If their heads were cut off, even if they are convulsing (*mefarksim*), they impurify—like the tail of a lizard which convulses (*mefarkeset*) [after being cut off].”<sup>71</sup> This Mishna is paralleled by one in Tractate Hullin and Tractate Taharot (they are the same), which states, “If a man slaughtered an impure animal for a non-Jew and it is convulsing (*mefarkeset*), it imparts food-impurity (*tumat okhlin*),<sup>72</sup> but not *tumat nevelah* until it dies (*tamut*) or it is decapitated.”<sup>73</sup>

There is a debate among the *Rishonim*<sup>74</sup> both as to whom and to what decapitation refers in the Mishna in Ohalot. Rashi writes that it refers to the eight creepy crawlers (*sberatzim*) mentioned in Leviticus 11:29–30, who have unique rules for imparting impurity.<sup>75</sup> Rashi also writes that decapitation does not mean completely severing the head from the body, but rather severing most of the trachea and esophagus along with the backbone and most of the surrounding flesh.<sup>76</sup> By applying “decapitation” solely to *sberatzim*, Rashi makes a distinction between animals and humans, who

69 *Tur/Shulhan Arukh*, Yoreh Deah 370; *Arukh Hashulhan*, Yoreh Deah 370:1.

70 Many have identified “brain death” as “physiological decapitation” or the total destruction of the entire brain. Yet, conceptually, there is a big difference between decapitation and “physiological decapitation,” which can be seen as follows: Physiological decapitation is seen as an analogy to decapitation because in physiological decapitation the brain is destroyed, and thus could be imagined as separated from the body. Yet in normal decapitation the brain is not destroyed, it is actually separated from the body. It may still function on its own accord, even if for only a few seconds (and, through technological means, it may be possible to restore circulation to the brain, and thereby restore both consciousness and function, even if the brain might not have a body for that function to effectuate).

71 *Mishna*, Ohalot 1:6.

72 *Tumat Okhlin* are contracted by food items that become ritually defiled by contact with a dead body and can then defile other food and drink. The reason why it contracts this type of ritual impurity is based on the different legal prohibitions for Jews and non-Jews regarding eating animals. At the moment of slaughter, the animal may not be eaten by the Jew because it is not a kosher animal. For Jews, however, ritual slaughter deems an animal to be dead. For a non-Jew, the animal is prohibited because it is still considered alive, and non-Jews are prohibited to eat live animals according to Noahide law. This animal thus contracted *tumat okhlin* from itself, given the different status it has due to the different legal norms that categorize it.

73 *Mishna*, Hullin 9:1; *Mishna*, Taharot 1:4. See also *Babylonian Talmud*, Hullin 117b.

74 The *Rishonim* were the leading rabbis who lived approximately from the eleventh century through part of the fifteenth century.

75 Rashi, *Babylonian Talmud*, Hullin 21a, s.v. “hutzu.”

76 This is the position of Rabbi Asi in the name of Rabbi Mani in *Babylonian Talmud*, Hullin 21a.



would be deemed dead by virtue of having their necks broken together with most of the surrounding flesh, in line with Zeiri's position, and *sheratzim*, who would also need most of their trachea and esophagus severed as well. Rabbi Shlomo ben Avraham ibn Aderet (Rashba)<sup>77</sup> attempts to explain Rashi's reason for this distinction; *sheratzim* could survive having their necks and backbone broken together with most of the surrounding flesh, and thus killing them demands a more complete separation of the head from the body.<sup>78</sup>

Tosafot<sup>79</sup> seem to have a disagreement among themselves with respect to whom decapitation applies, writing in one place that it applies to animals and birds,<sup>80</sup> and in another that it applies to humans.<sup>81</sup> Yet, these two comments in Tosafot need not be seen as a disagreement. Rather, they can be reconciled by viewing them in aggregate, Tosafot apply decapitation both to animals (and birds) and to humans. Tosafot also seem to hold that decapitation is complete severance of the head from the body, or at least a greater injury than breaking the spine with the majority of the flesh around the spine removed. Tosafot, therefore, see the Mishna to be at odds with the position of Zeiri (and that of Rabbi Yehuda).<sup>82</sup>

Maimonides holds that what is meant by decapitation is the complete separation of the head from the body,<sup>83</sup> yet he does not see this position as being at odds with the position of Zeiri or Rav Yehuda, since he includes both decapitation and having one's neck broken together with most of the surrounding flesh as rendering a body able to impart ritual impurity of a corpse (*tumat met*) or of a carcass (*tumat nevelah*).<sup>84</sup> Rabbi Yaakov ben Asher, Rabbi Yosef Karo, and Rabbi Yechiel Michel Epstein do not include decapitation in their listing of the cases which deem a person to be dead. This could either be due to the position of Tosafot (that they rule according to Zeiri against the Mishna in Ohalot) or because they see no legal ramification between decapitation and a person breaking his or her neck and severing the majority of the neck's flesh along with it, since the former is a more extreme version of the latter. If it is the case, however, that there are no legal ramifications between the two positions, then Maimonides's inclusion of decapitation is curious, since he already includes Zeiri's position.<sup>85</sup>

77 Rabbi Shlomo ben Avraham ibn Aderet (1235–1310) was a rabbi in Spain.

78 Rashba, *Babylonian Talmud*, Hullin 21a, s.v. "amar leih."

79 Tosafot are medieval French commentaries on the Talmud.

80 Tosafot, *Babylonian Talmud*, Hullin 21a, s.v. "hutzu rasheihen."

81 Tosafot, *Babylonian Talmud*, Hullin 21a, s.v. "hutzu mamash."

82 Tosafot, *Babylonian Talmud*, Hullin 21a, s.v. "hutzu mamash." This is the position of Reish Lakish.

83 In his commentary on Mishna Ohalot, he writes regarding decapitation, "huvdalu rasheiheim," in line with the position of Reish Lakish's position of "mamash," yet see below for discussion and defense of this interpretation.

84 Hilkhot Tumat Met 1:15; Hilkhot Sha'ar Avot HaTumah 2:1.

85 David Shabtai writes, "Rambam, however, in delineating various death-defining injuries for both humans and animals, lists both *hatazat ha-rosh* [decapitation] as well as *shevirat ha-mafreket ve-rov basar imah* [breaking of the neck along with removal of the majority of the adjacent flesh], seemingly indicating that they represent different injuries and that both are halakhically meaningful." David Shabtai, *Defining the Moment: Understanding Brain Death in Halakhah* (New York: Shores Press, 2012): 130. In trying to explain the need for both examples, Shabtai refers to Rabbi Yonatan Eyebeschutz, who posits that decapitation means severing the front of the neck without severing the spinal cord so as to distinguish it from breaking of the neck along with removal of the majority of the adjacent flesh, which is severing the back of the neck. *Pleiti* 27:2. However, based on the passage in the *Babylonian Talmud*, Hullin 121b, Maimonides writes, "When a Jew slaughters a non-kosher animal for a gentile and slits the two—or the majority of the two—signs of ritual slaughter, it imparts the *tumat okhlin* (impurity associated with food) as long as it is in its death-throes." Hilkhot Tum'at Okhlin 3:4. See also *Babylonian Talmud*, Gittin 70b, as it relates to humans. Decapitation, however, imparts *tumat nevelah*, and not *tumat okhlin*. Decapitation must therefore be different from simply severing the front of the neck. Shabtai also refers to Rabbi Yosef Te'omin and Rabbi David Pardo, who posit that decapitation refers to severing the

The difficulty, however, only occurs when one tries to reconcile the Mishna in Ohalot with the passage in Hullin, presuming that the Mishna in Ohalot is internally consistent. Yet the Mishna in Ohalot contains two different statements about transmitting impurity, which may or may not be equivalent. There are two ways of understanding the different rulings in the Mishna in Ohalot: (1) The latter part of the Mishna (“If their heads have been cut off, even though they are moving convulsively, they are unclean”) agrees with the former part of the Mishna (“A person does not defile [as a corpse] until he dies.”). In other words, decapitation causes a person’s soul to leave his body immediately; therefore, a decapitated person is defined as dead and imparts impurity. The residual movements of the person’s body or head are not considered as demonstrating life. (2) The latter part of the Mishna disagrees with the former part. In other words, decapitation renders a person or an animal able to impart impurity, even if they might still be alive at the moment, as indicated by the presence of movement. Nevertheless, they are deemed dead according to halakha. As such, we should see any movement in the body of a person who has been decapitated as inessential, as we consider the movement of the cut-off tail of a lizard as halakhically insignificant.<sup>86</sup> Rabbi Ovadia M’Bartenura interprets the Mishna in Ohalot according to this second interpretation. Decapitation deems an animal and a person as dead even if there are still signs of life (*nevelah m’hayyim*), since it is still moving (*mefarkeset*).<sup>87</sup>

Maimonides inclusion of decapitation along with Zeiri’s position may support this second reading as well. We already discussed above how inclusion of decapitation in addition to Zeiri’s position supports the position that there is a practical ramification between them, as it relates to the erroneous belief that ritual slaughter may prevent contraction of *tumat nevelah*.<sup>88</sup> As such, when Maimonides mentions both positions, he explicitly separates the two, “When a non-kosher domesticated animal or wild animal was slaughtered, it does not impart the impurity of a carcass as long as it is in its death-throes unless its head is cut off . . . if it was ripped apart from its back or its back bone was broken and the majority of the meat around it severed, it is considered as a *nevelah* in all

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esophagus and the trachea along with the spinal cord, but not including the majority of the surrounding flesh. However, Rabbi Karo, in his commentary on Maimonides’s code called the *Kesef Mishna*, argues that Maimonides interprets decapitation as literal, i.e. more extensive than simply severing the spinal cord along with removal of the majority of surrounding flesh. *Kesef Mishna*, Hilkhot Tumat Met 1:15. He reasons that Maimonides definition of decapitation with respect to animals and humans is consistent with his definition with regard to *sberatzim*, where he writes, “A *sberetz* does not impart impurity until it dies. If it has been decapitated, even if the head is still connected to the skin of the body, and it is still in its death throes as happens with regard to the tail of a lizard, it imparts impurity.” Hilkhot Sha’ar Avot Ha’Tumah 4:14. This would also explain Maimonides’s wording in Hilkhot Shehita 2:9: “If he drew the knife back and forth until he cut off the head entirely (*batakha ha’rosh v’hetizu*), his slaughter is acceptable.” See *Babylonian Talmud*, Hullin 30b.

86 Note that the insignificance of the moving lizard’s tail is different than that of the decapitated person’s moving body. The lizard is still alive, even without the moving severed tail. The person, on the other hand, is dead, despite the severed moving body.

87 *Commentary on Mishna*, Hullin 9:1.

88 Rabbi Yaakov ben Asher rules in *Tur*, Yoreh Deah 27, that an animal whose neck was broken with the majority of its flesh severed is a *nevelah*. Rabbi Karo in his *Beit Yosef* questions why he includes it, since the *Tur* does not usually mention halakhot that are not practiced today (such as *tumat nevelah*) and there is no practical difference between *treifa* and *nevelah* with respect to the prohibition of eating the animal. Rabbi Yehiel Michel Epstein, in *Arukh HaShulhan*, Yoreh Deah 27:7, explains the practical ramification. He writes that the reason the *Tur* states that an animal whose neck was broken with the majority of its flesh severed is a *nevelah* is to inform that one may cut a piece of the animal and give it to a non-Jew even while it is still moving, which would in normal circumstances be considered a limb from a live animal (*eiver min ha’chai*), and that Rabbi Yaakov needed to make this case explicit since the animal would still be moving, unlike in the other cases.

contexts.”<sup>89</sup> However, with respect to humans, Maimonides lists decapitation along with the other cases mentioned in Tractate Hullin, including Zeiri’s position, “A corpse does not impart ritual impurity until the person actually dies . . . If his backbone is broken together with most of the surrounding flesh, he was torn apart like a fish from his back, he was decapitated, or he was cut in half from his stomach, he imparts impurity, even though some of his limbs are still making convulsive movements (*merafref b’echad m’eivaraiu*).”<sup>90</sup> By mentioning it alongside the other examples, he implies that it serves as another example where there is a legal presumption that the person is dead. Yet, the presumption is not the same as that in Zeiri’s position. It is stronger by virtue of the fact that it is a much more significant trauma. Moreover, because there is not the same erroneous belief that ritual slaughter would be effective, since no one would ritually slaughter a human being as they would an animal, Maimonides can list the two examples together.

Though Rabbi Moshe Feinstein rules that decapitation serves as literal death and not simply a presumption of death, such that one would not have an obligation to reattach the person’s head, even if it were possible,<sup>91</sup> Rabbi Shlomo Zalman Auerbach has stated that if it is possible to reattach a person’s head to his body, he thinks that it would be considered as saving his life and not resurrection of the dead.<sup>92</sup> In other words, decapitation is not wholly distinct from the other examples mentioned in Hullin, it is only a more obvious example of where one could rely on a presumption of death, given the person’s condition. However, if we had the technology to reattach a person’s head to his body and revive the organ systems that, were it not for their functioning, the person would be dead, then the decapitated person would still be alive, even while decapitated, since the termination of functioning is not irreversible.<sup>93</sup>

### Goses

A *goses* is loosely defined in the halakhic literature as someone who is near death or is in the process of dying. There is a legal presumption that the majority of *gosesim* (plural of *goses*) will die within a short period of time; however, this presumption only affects one’s consideration of factors that affect an individual *goses* when one is not in the person’s presence to create a situation of doubt.<sup>94</sup> For example, based on the Tosefta,<sup>95</sup> Maimonides writes, “Although one of the inhabitants of a courtyard is a *goses*, even when he will not survive the day, his presence causes the other inhabitants of the courtyard to be forbidden [to carry] until they grant him a share in a

89 Hilkhoh Sha’ar Avot HaTumah 2:1.

90 Hilkhoh Tumat Met 1:15.

91 *Igrot Moshe*, Yoreh Deah 2:174. The reason is because, while there is an obligation of saving a person’s life, there is no obligation to resurrect the dead.

92 *Nishmat Avraham*, Yoreh Deah 546.

93 Rabbi Shlomo Zalman Auerbach writes that if a medical intervention is not successful, then time of death is recorded retroactively as at the end of respiration and not at the end of resuscitative efforts. If resuscitative efforts succeeded, then we say that the person was alive the whole time. See *Minhat Shlomo* 86:5.

94 The exception to this principle is the case in determining the worth of a *goses* for the sake of making a vow (*neder*) or for an endowment valuation (*arakhim*). For these purposes, the principle—since most *gosesim* will die, he is considered as if he is [already] dead—applies. *Babylonian Talmud*, Arakhin 6b; Hilkhoh Arakhim VaHaramim 1:13. The reason for this exception is that, when it comes to monetary valuation for the purpose of a *neder*, there is no valuation for a *goses*, since the majority of them will die in the near future. For *arakhim*, the Torah states explicitly that the person should “stand before the priest, and the priest shall value him,” Leviticus 27:8, yet the Talmud continues to claim that a *goses* is unable to stand. As such, these exceptions do not contradict the principle; their distinction is based on other factors.

95 *Tosefta*, Eiruvim 5:21.

loaf of bread and include him in the *eruv*.”<sup>96</sup> Rabbi Shmuel Yitzchak Heilman<sup>97</sup> explains that even though Maimonides writes that the *goses* “will not survive the day,” this is a statistical assumption based on the fact that the majority of *gosesim* die; however, despite the general assumption, we nevertheless do not assume with surety that this particular *goses* will die.<sup>98</sup> We therefore must include him in the *eruv*, since there is still a doubt as to whether the particular person will continue to live.<sup>99</sup> The creation of doubt based on the difference between statistical assumption and actual fact is further exemplified in the following halakha: When a *goses* sends a messenger to deliver a deed of divorce (*get*), the divorce will be subject to a doubt, since there is a doubt as to whether the *goses* was alive at the time the *get* was delivered.<sup>100</sup> The doubt is based on the fact that, even though the majority of *gosesim* die (within a short period of time) and one cannot divorce his wife after he has died, one, nevertheless, does not know for sure whether this particular *goses* had in fact died before the *get* was given.<sup>101</sup> The presumption that he will die in a short period of time is particular to a *goses*, it does not apply to someone who is simply sick (*a choleh*) or someone who is simply old (*a zaken*), each of whose *get* would take effect based on the presumption (*chazaka*) that he is still alive. Similarly, based on the same Talmudic presumption (that the majority of *gosesim* will die),<sup>102</sup> Maimonides rules, “If a woman left her husband while he was a *goses* in another country, she may not partake of Terumah (food that only a Cohen or his family may eat), whether she is the daughter of a Cohen married to an Israelite or the daughter of an Israelite married to a Cohen. [The rationale is that] most [though not all] *gosesim* die.”<sup>103</sup> A daughter of a Cohen married to an Israelite would not be able to eat Terumah while her husband is still alive, though she would be able to eat it if he died childless. On the other hand, a daughter of an Israelite married to a Cohen would not be able to eat Terumah once her husband is dead. In both cases, the doubt whether the particular person (that is, the woman’s husband), is dead or not precludes her from eating Terumah because in cases of Torah law, in situations of doubt, the halakha is in accord with the stringent position.

Based on Tractate Semahot,<sup>104</sup> Maimonides, followed by Rabbi Yosef Karo,<sup>105</sup> makes the distinction between legal presumption and the reality of a particular *goses* explicit when he writes, “A *goses* is like a living person with regard to all matters.”<sup>106</sup> Even if his life is like a flickering candle,<sup>107</sup> it is not extinguished. Rabbi Eliezer Waldenberg<sup>108</sup> describes a *goses* in a similar light, as

96 Hilkhoh Eiruvim 4:12. An *eruv* encloses an urban area so that the entire area is considered a private domain, thereby permitting activities within it that are normally forbidden in public on Shabbat.

97 Rabbi Shmuel Yitzchak Heilman (1868–1953) was a renowned rabbi who served as a Dayan of the London Beth Din.

98 *Ohr HaYashar*, Hilkhoh Eiruvim 4:12.

99 *Ohr HaYashar*, Hilkhoh Eiruvim 4:12.

100 *Babylonian Talmud*, Gittin 28a; Hilkhoh Gerushin 6:28.

101 *Tur*, Even HaEzer 141. See, however, *Beit Shmuel*, Even HaEzer 141:105, who writes that one should distinguish between a *goses* who can still speak (whose *get* is a matter of doubt) and one who cannot (whose *get* would not be valid even doubtfully). If at the time the *goses* gave the *get* to the messenger, he was able to speak, one might suspect that he lost mental capacity before the *get* was delivered, rendering the *get* invalid. However, we do not suspect this if he remains settled and not mentally agitated. Yet he also cites Rabbi Yoel Sirkes (Bach), who writes that one would suspect a person’s mental state if he gave a messenger a *get* before he became a *goses*, but the messenger did not deliver it until he became a *goses* who was unable to speak.

102 *Babylonian Talmud*, Gittin 28a.

103 Hilkhoh Terumah 9:3.

104 *Semahot* 1:1.

105 *Shulhan Arukh*, Yoreh Deah 339:1.

106 Hilkhoh Avel 4:5.

107 *Babylonian Talmud*, Shabbat 151b.

108 Rabbi Eliezer Yehuda Waldenberg (1915–2006) was a halakhic decisor in Jerusalem.

one who is dying, but currently continues to live, even if his situation is extremely precarious, and there is no external intervention that impedes him from dying.<sup>109</sup>

Based on the above we can derive the following principle: For those who fit the category of a *goses*, medical intervention will either serve to treat the person so that he or she recovers, or it will impede him or her from dying. If the latter, medical interventions may be removed,<sup>110</sup> but any other direct movement of the *goses* might serve to hasten his or her death. For those who fit the categories described by the various Talmudic examples—the person is deemed to be dead but physical or physiological movement nevertheless makes the case somewhat ambiguous—medical interventions can serve as a diagnostic test as well as an attempt to sustain the person. If medical intervention is successful or can show that success is still a possibility, then the person should be deemed alive and attempts should be made to save him or her. If medical interventions show that systemic functions, such as respiration, are irreversibly terminated, then the person should be deemed dead, even if medical technology can maintain physiological activity.

### *Meguyyad*

A *meguyyad* is someone who has incurred a fatal wound but is nevertheless still alive. Rabbi Asher ben Yehiel (Rosh)<sup>111</sup> interprets *meguyyad* as one whose veins were severed, and Maimonides interprets it as one who was cut or stabbed.<sup>112</sup> Rashi interprets the term to mean that the person is stabbed and wounded all over.<sup>113</sup>

In a different Mishna from the one in Ohalot, a *meguyyad* is compared to people who have suffered other forms of injuries. “[Potential witnesses] may not testify [that a person has died] until the soul leaves, and even if they see a *meguyyad*, a *tzluf*,<sup>114</sup> or someone eaten by a wild animal [they may not testify until the soul leaves].”<sup>115</sup> In the case of an animal eating a person, Maimonides interprets it as the animal did not eat from the head or the heart, but rather a place that would not kill a person instantly.<sup>116</sup> The halakhic decisors differentiate between different types of *meguyyadim* (plural of *meguyyad*) regarding whether or not one can testify that they are dead. For example, Maimonides writes, “If we see a man who is being hanged (*tzluf*) and a vulture is eating from his body, testimony may not be offered that he died. [This applies] even if he was stabbed with a lance, or arrows were shot at him (*she’kadruhu o she’yaro bo chitzim*).”<sup>117</sup> Rabbi Karo, in his *Beit Yosef*, and Rabbi Shmuel ben Uri Shraga Phoebus,<sup>118</sup> in his *Beit Shmuel*, however, write that if the person was stabbed or shot in a place that would kill him, testimony that he died may be offered.<sup>119</sup>

109 *Tzitz Eliezer* 14:81.

110 *Rema*, Yoreh Deah 339:1. As to how one should remove these impediments so as not to hasten death, see *Tzitz Eliezer* 13:8; *Igrot Moshe*, Yoreh Deah 3:132; Avraham Steinberg, “Kelalim Halakhti'im l'Hitnahagot Rofeh b'Yichida l'Tipul Nimratz” [Halakhic rules for physician behavior in the ICU], *Assia*, no. 63/64 (5759/1999): 18–19.

111 Rabbi Asher ben Yehiel (1250?–1327) was a famous rabbi who lived in the Holy Roman Empire and in Spain.

112 *Commentary on Mishna*, Ohalot 1:6.

113 Rashi, *Babylonian Talmud*, Yevamot 120a.

114 A *tzluf* is typically translated as someone who is crucified, but it may also mean someone who is hanged.

115 *Mishna*, Yevamot 16:3.

116 *Commentary on Mishna*, Yevamot 16:3.

117 *Hilkhot Gerushin* 13:18. He continues, clarifying where the animal was eating the person, “If, however, we see the vulture eating from a place that would cause him to die—e.g., his brain, his heart or his intestines, one may offer testimony that he died.”

118 Rabbi Shmuel ben Uri Shraga Phoebus (1650–1706) was a Polish rabbi and Talmudist of Woydyslaw.

119 *Beit Yosef*, Even HaEzer 17; *Beit Shmuel* 17:94.

Having both the *meguyyad* and the *goses* mentioned in the Mishna in Ohalot means that each represents a distinct category, whose description does not overlap completely with the other.<sup>120</sup> One way to look at the distinction is in terms of how morbidity has come about, i.e. the *goses* is dying from illness and the *meguyyad* from physical trauma.<sup>121</sup> Another way to look at the distinction between the two is that each category has different assumptions regarding the possibility of survival. The presumption is that majority of *gosesim* die, yet, with respect to a *meguyyad*, there may be other factors (such as how he was stabbed) that must be considered before ascribing a presumption of life or death. Rabbi Elijah ben Solomon Zalman (the Vilna Gaon)<sup>122</sup> offers a third way to distinguish between a *meguyyad* and a *goses*. He writes that the former still has consciousness,<sup>123</sup> while the latter still has the ability to continue living on his own accord, meaning that those systems which need to function in order for the person to live (such as circulation and respiration) are still functioning, even if weak and even if only for a short while longer.<sup>124</sup>

BRINGING THE CASES TOGETHER

As a way to understand the halakhic rulings regarding various Talmudic cases discussed above, given today’s possibilities for medical intervention, the Vilna Gaon’s distinction between a *goses* and a *meguyyad* may provide an overarching way to understand which types of movement may indicate whether a person should be deemed dead or alive.

If a person demonstrates consciousness (either psychologically or neurologically<sup>125</sup>), then there is indication that the person is still alive and any external assistance<sup>126</sup> should be seen as a means for those systems necessary to sustain life, such as respiration and circulation, to continue to

120 *Hon Ashir*, Mishna Ohalot 1:6.

121 This view, however, limits the category of *goses* to a *goses b’yidei Shamayim* (*goses* by the hands of Heaven) even though there is also a category for *goses b’yidei adam* (*goses* because of another person’s actions). Though it is possible to conceive of the *meguyyad* as a paradigmatic example of a *goses b’yidei adam*.

122 Rabbi Elijah ben Solomon Zalman (1720–1797), was a Talmudist, halakhist, kabbalist, and the foremost leader of non-Hasidic Jewry of his time.

123 The Vilna Gaon’s reasoning is based on *Babylonian Talmud*, Gittin 70b: “And it was taught in a baraita: If they saw a *meguyyad* or a man crucified on a cross (*tzluw al hatzliva*), and he signaled and thereby stated, ‘Write a bill of divorce for my wife,’ then those present should write and give it to her. To what can these cases be compared? There [for a *meguyyad* or a man crucified] his mind is lucid, though he has begun to feel weakness [and will die very soon.]”

124 *Eliyahu Rabbah on Ohalot*. Rabbi Bleich has argued that consciousness is “nowhere posited as a condition negating otherwise dispositive criteria of death.” Bleich, “Of Cerebral, Respiratory and Cardiac Death,” 58. However, there are those who argue that consciousness is an implied, independent indication of life, citing *Babylonian Talmud*, Gittin 70b, where Rav Yehuda says that Shmuel says, “One whose throat was slit and his two pipes[, i.e. his trachea and esophagus,] or the majority of the two pipes were severed, and he signaled and thereby stated through his gestures: ‘Write a bill of divorce for my wife,’ then those present should write and give it to her.” The discussion in the passage relates to whether the person can have the legally mandated intention to divorce his wife or not. It is not about whether the person is alive or not. It is presumed as obvious that the person is alive.

125 Rabbi Aaron Soloveichik has argued that brain waves that can be recorded on an electroencephalogram constitute “movement” and should be deemed as halakhically relevant in determining whether one deems a person as alive or not. See a discussion of his position in J. David Bleich, “Survey of Recent Halakhic Periodical Literature,” *Tradition: A Journal of Orthodox Jewish Thought* 16, no. 4 (1977): 121–39, at 137. See also Ahron Soloveichik, “Death According to the Halacha,” *Journal of Halacha and Contemporary Society*, no. 17 (1989): 41–48.

126 External assistance means assistance in maintaining the internal functioning of the person, which would include artificial circulation, dialysis, respirators, or transplantation.

function. External assistance in this case should not be seen simply as a means to continue physiological activity without function. It also should not matter how much external assistance the person utilizes. If the person does not demonstrate consciousness, but his or her systems, such as respiration or circulation, continue to function independently, or there is a chance that they either will be able to function independently in the future or the person will regain consciousness, then the system's current activity should be seen as indication that the person is still alive, even when assisted by mechanical or medical means. If the person does not demonstrate, and will not regain, consciousness, and his or her bodily systems, such as respiration and circulation, will never be able to resume independent functioning, there is no definite indication that the person is alive. He or she may thus be presumed, or deemed, dead. External assistance should not be considered as sustaining life function. Rather, it should be considered as simply maintaining physiological activity.

Based on these conditions, in the event that a person is decapitated, and there are tests to indicate neurological activity, and medical technology exists that can maintain or resume neurological activity so that consciousness and physiological continuity of function could be resumed through transplantation, the person may still be deemed alive, even if his or her head is separated from a body.

#### ADDENDUM: IS IT A HEAD TRANSPLANT OR A BODY TRANSPLANT?

The question of whether the procedure should be called a head transplant or a body transplant speaks to the question of whether the head or the body has primacy in halakha in terms of what constitutes the personhood of the individual. Based on the Vilna Gaon's distinction above, it would seem that the head, as the seat of consciousness, would take primacy over the body. However, is there explicit Talmudic or halakhic discussion that can support the implications of the Vilna Gaon's distinction?

The essentiality of the head over that of the body can be seen in light of the following Mishna: "If the head was found in one place and the body in another place, they bring the head to the body, the words of Rabbi Eliezer. Rabbi Akiva says: [they bring] the body to the head."<sup>127</sup> The case relates to a situation of *met mitzvah*, where someone finds a person dead on the road and there is no one else around to give the person a proper burial. According to the halakha, the deceased "acquires" the land on which it is found for the purpose burying it in that place. In this case, there is a disagreement as to whether in the case of a decapitated person, the body or the head acquires the ground underneath it—in other words, which part of the person is considered primary.<sup>128</sup> Maimonides rules according to Rabbi Akiva. He writes, "If the body of a corpse is found in one place and the head in another place, the body is brought to the head, and then the corpse is buried in that place. Similarly, whenever a corpse is found with no one to bury it, the body is brought to the head, and then the corpse is buried in that place."<sup>129</sup> Given this frame of

<sup>127</sup> *Mishna*, Sotah 9:3; *Babylonian Talmud*, Sotah 45b.

<sup>128</sup> The Talmud provides a reason why Rabbi Eliezer and Rabbi Akiva disagree. "With regard to what do they disagree? [They both agree that he should be buried in the place where he was killed, but] one Sage[, Rabbi Eliezer,] holds that his body fell in its place and the head rolled away. And one Sage[, Rabbi Akiva,] holds that his head fell where it fell, and the body continued onward." *Babylonian Talmud*, Sotah 45b. This does not negate the idea that the disagreement is over which body part is primary since in any event both the body and the head will move while falling to the ground. The perspective of what fell in its place and what continued moving depends on which body part serves as the anchoring perspective.

<sup>129</sup> *Hilkhot Rotzeah uShmirat Nefesh* 9:9.

reference, that the body is secondary to the head,<sup>130</sup> then the procedure in question should be called a body transplant and not a head transplant.

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130 Primacy is not determined by amount. For example, see *Mishna*, Berahot 6:7, regarding making the appropriate blessing for a mixture: “This is the principle: Everything that is primary, and has something secondary with it, he blesses on the primary and [thereby] exempts the secondary.”