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Robert Rosenthal Kwall

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## ARTICLE

# REMEMBER THE SABBATH DAY AND ENHANCE YOUR CREATIVITY!†

ROBERTA ROSENTHAL KWALL

### INTRODUCTION

The Fourth Commandment establishes the Sabbath as a weekly institution and thus introduces a revolutionary concept into the ancient Near Eastern world.<sup>1</sup> The weekly Israelite Sabbath, known in Hebrew as *Shabbat*, constitutes the singular exception to the otherwise universal practice of basing units of time on the movement of the moon and the solar cycle.<sup>2</sup> From a theological standpoint, Shabbat represents the very essence of the Israelite, and in modern terms Jewish, religion. Steeped in the theological concept of the Divine creation of the world as its basis, Shabbat exemplifies Israel's monotheism: "God is entirely outside of and sovereign over nature."<sup>3</sup>

Although Christianity and Islam have adopted the weekly Sabbath as part of their traditions, the Shabbat laws originating in the Torah and further developed by the rabbinic tradition beginning in the early centuries of the Common Era represent a unique expression of Judaic cultural tradition. These laws are extraordinarily complex. Their essence, however, can be

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† © 2014 Roberta Rosenthal Kwall, Raymond P. Niro Professor of Intellectual Property Law; Director, DePaul College of Law Center for Intellectual Property Law and Information Technology; Co-Director, DePaul University College of Law Center for Jewish Law & Judaic Studies. I thank Professor Thomas Berg for inviting me to present a keynote address at the Intellectual Property and Religious Theory Conference and the editors of the Law Journal for their editorial assistance. Thanks and appreciation also are due to my students, Jonathan Crowley and Drew Redmond, for their excellent research assistance. This Article is dedicated to the memory of Rabbi Reuven Frankel, who passed away on April 14, 2013 (14 Iyar 5773) and his surviving wife, Dr. Penina Frankel. Together, and as individuals, they proudly represent the spirit of Judaism and creativity, and embody many of the themes discussed in this piece. Comments about this Article are welcome: rkwall@depaul.edu.

1. ETZ HAYIM: TORAH AND COMMENTARY 445 n.8 (David L. Leiber et al. eds., Rabbinical Assembly 2001) [hereinafter ETZ HAYIM] ("There is nothing analogous to the Israelite *Shabbat* in the entire ancient Near Eastern world, where seven-day units of time were well known.")

2. *Id.*

3. *Id.*

stated simply and effectively: Shabbat is set aside as a day in which ordinary, work-day activities are suspended.

Beginning in the twentieth century, researchers examining creativity theory have begun to focus on the relationship between a break period and enhanced creativity. The reasons for this relationship are still being explored, but many interesting theories are being discussed and advanced in the literature about the importance of a break period and why this period has the effect of enhancing creativity. In short, science now seems to be documenting the benefits of Shabbat, an institution dating back to over three thousand years, by demonstrating the importance of break or incubation periods as a boon to human creativity. This Article examines this research and links it to the importance of Shabbat.

Part I of this Article outlines the theological predicate of Shabbat so as to provide a deeper appreciation for the complex legalities surrounding the observance of the Jewish day of rest. Part II surveys the history and development of the laws concerning Shabbat, particularly as they relate to the creation of works of authorship. Part III discusses recent research in the social sciences regarding a break period, known as incubation. Part IV provides a bridge from this research to the significance of Shabbat for enhancing human creativity.

## I. THE THEOLOGY OF SHABBAT

*Remember the Sabbath day and keep it holy. Six days you shall labor and do all your work, but the seventh day is a Sabbath of the Lord your God.*<sup>4</sup>

The opening sections of Genesis furnish the theological foundation for man's existence: man is created in the image of God, and his function on earth is to mirror and serve God through the exercise of human creativity. Equally significant, man is to mirror the Divine by refraining from creating on the seventh day.<sup>5</sup> Thus, the first Creation narrative in Genesis recounts God's creation of the world in six days.<sup>6</sup> God creates man on the sixth day.<sup>7</sup> In this narrative, the Torah<sup>8</sup> states: "God created man in His image, in the image of God He created him."<sup>9</sup> Further, God commanded man to "fill the

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4. *Id.* at 445–46 (translation of *Exodus* 20:8-9).

5. *See infra* text accompanying notes 51–65.

6. A nuanced examination of the Creation texts in Genesis discloses two distinct Creation stories. For an in depth discussion of these narratives and their implications for human creativity, see Roberta Rosenthal Kwall, *Inspiration and Innovation: The Intrinsic Dimension of the Artistic Soul*, 81 NOTRE DAME L. REV. 1945, 1951–58 (2006). *See also* ROBERTA ROSENTHAL KWALL, *THE SOUL OF CREATIVITY* (2010).

7. ETZ HAYIM, *supra* note 1, at 9 (corresponds to *Genesis* 1:26).

8. The term "Torah" designates the Five Books of Moses, the first five books of the Hebrew Bible.

9. ETZ HAYIM, *supra* note 1, at 10 (corresponds to *Genesis* 1:27).

earth and master it.”<sup>10</sup> Through this language, the first Creation narrative establishes that man’s capacity for artistic creation mirrors or imitates God’s creative capacity.<sup>11</sup> According to Rabbi Joseph Soloveitchik, a leading modern theologian and philosopher, “the term ‘image of God’ in the first account” of the Creation underscores “man’s striving and ability to become a creator.”<sup>12</sup> Indeed, Soloveitchik believes that “the peak of religious ethical perfection to which Judaism aspires is man as creator.”<sup>13</sup> He claims that the Torah chose to relate to man “the tale of creation” so that man could derive the law that humans are obligated to create.<sup>14</sup> According to Jewish law, man was not intended to be a passive recipient of the Torah, but rather “a partner with the Almighty in the act of creation.”<sup>15</sup>

Further, the “godlike notion of creation” found in the first Creation narrative provides the basis for the parental metaphor of authorship, a concept that has been embraced substantially by authors and creativity theorists alike.<sup>16</sup> In fact, the word “creativity” derives from the Latin verb *creo*,

10. *Id.* (corresponds to *Genesis* 1:28).

11. Cf. Mark Rose, *Copyright and Its Metaphors*, 50 *UCLA L. REV.* 1, 11 (2002) (noting that “‘some creative spark’ . . . if unpacked could be shown to carry a numinous aura evocative ultimately of the original divine act of creation itself.”).

12. JOSEPH B. SOLOVEITCHIK, *THE LONELY MAN OF FAITH* 12 (1965). Jewish theology teaches that man’s capacity for speech mirrors God’s, and that man’s speech is reflective of his creative capacity in the same way that God’s speech reveals His creative capacity. In describing the Divine act of creation, the Torah does not say that God *made* a world, but that He *spoke* the world into existence by preceding every creative act by saying what He will do. “God said, ‘Let there be light,’ and there was light.” *THE CHUMASH: THE STONE EDITION 3* (NOSSON SCHERMAN et al. eds., 1st ed. 1993). These “speaking[s]” are referred to as the “Ten Utterances” with which, according to the text, God created the world. See BEREL WEIN, *PIRKEI AVOS: TEACHING FOR OUR TIMES* 184–85 (2003).

Even historians who are not writing about the Bible from a theological perspective view this language as furnishing a path leading man to regard himself as a potential creator, thus underscoring an unprecedented parallel between God and humanity. See DANIEL J. BOORSTIN, *THE CREATORS: A HISTORY OF HEROES OF THE IMAGINATION* 41 (1992). It should be noted that the Hebrew root of the word translated as “created” (in Hebrew, *barah*) is used in the Bible only for “divine creativity.” This is because *barah* refers to creation *ex nihilo* which can only be done by the Divine. See *THE CHUMASH: THE STONE EDITION*, *supra*, at 3. Despite this distinction, however, rabbinic scholars regard the first Creation narrative in *Genesis* as “challeng[ing] man to create, to transform wilderness into productive life.” ABRAHAM R. BESDIN, *REFLECTIONS OF THE RAV* 27 (Ktav Publ’g House, rev. ed. 1993) (1979) (quoting a lecture by Rabbi Joseph Soloveitchik). For further discussion and development of these themes, see *THE SOUL OF CREATIVITY*, *supra* note 6, at 11–22.

13. JOSEPH B. SOLOVEITCHIK, *HALAKHIC MAN* 101 (1983).

14. *Id.*

15. *Id.* at 81.

16. E.g. Rose, *supra* note 11, at 9 (discussing the usefulness and persistence of the paternity metaphor in property). There are many illustrations of God’s parental connection to His creations in the Old Testament and the Hebrew liturgy. One of the most concrete examples of this concept appears in the Book of *Jonah*, which concludes with the idea that God has pity on the city of Nineveh because this was His creation, and it is God’s concern for all creatures that maintains them in life. *Haftarah for Yom Kippur*, in ETZ HAYIM, *supra* note 1, at 1246, 1251. Similarly, in the narrative about Noah and the Great Flood, the text recounts that God had “heartfelt sadness.” *THE CHUMASH: THE STONE EDITION*, *supra* note 12, at 29 (corresponds to *Genesis* 6:6). Rashi

which means “to give birth to.”<sup>17</sup> Indeed, the opening verses of Genesis reveal a description of the womb: “The deep, unformed darkness is the womb, ripe with potential. The water is the amniotic waters that protect the fragility of life.”<sup>18</sup> In other words, this narrative serves as a highly significant source reflecting man’s inclination to view himself as a creator with the potential for possessing a parental connection to his work.<sup>19</sup> When deceased sculptor Frederick Hart received the commission for his renowned sculptures adorning the main entrance to the Washington National Cathedral, he consulted this text in Genesis as “purely pragmatic research” for his own creative endeavor.<sup>20</sup> The sculptures ultimately were the product of an eleven-year spiritual quest, which preceded his conversion to Catholicism.<sup>21</sup>

This narrative of Creation from Genesis also establishes a significant theological predicate for Shabbat observance. A reference to Shabbat appears numerous times throughout the Written Torah, including the two recitations of the Decalogue (the Ten Commandments) that incorporate the injunction to observe Shabbat in the Fourth Commandment.<sup>22</sup> In this Creation narrative, the seventh day is depicted as the culmination of God’s creation, thus differentiating Divine creativity from *cessation* of Divine creativity. The text of Genesis states:

On the seventh day God finished the work that He had been doing, and He ceased on the seventh day from all the work that He had done. And God blessed the seventh day and declared it holy, because on it God ceased from all the work of creation that He had done.<sup>23</sup>

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explains this phrase as meaning that God, in preparing for the Flood, “mourned over the destruction of His handiwork.” RASHI, *THE TORAH: WITH RASHI’S COMMENTARY TRANSLATED, ANNOTATED, AND ELUCIDATED* 62 (Yisrael Isser Zvi Herczeg et al. trans., 1995). Another example appears in one of the weekday prayers recited by observant Jews three times a day. That prayer can be translated as: “Hear our voice, our God, pity and be compassionate to us . . .” The specific Hebrew word for “pity” used in this prayer is *chus*, which refers to an artisan’s special regard for the product of his hands. The underlying concept here is that God should pity us because we are His handiwork. *THE COMPLETE ARTSCROLL SIDDUR* 109 (Nosson Scherman & Meir Zlotowitz eds., Mesorah Publ’ns 1984).

17. Russ VerSteeg, *Rethinking Originality*, 34 WM. & MARY L. REV. 801, 826 (1993) (citing Oxford Latin Dictionary 456 (P.G.W. Glare ed. 1982)).

18. Karyn D. Kedar, *The Many Names of God*, in *THE WOMEN’S TORAH COMMENTARY* 127, 129 (Rabbi Elyse Goldstein ed., 2000).

19. Parents often view their children as reflections of themselves just as authors do their works. See generally NANCY FRIDAY, *MY MOTHER/MY SELF: THE DAUGHTER’S SEARCH FOR IDENTITY* (1997) (discussing the emotional and psychological dynamic of a mother-daughter relationship).

20. See Karen L. Mulder, *He Made Stone Talk*, CHRISTIANITY TODAY, Mar. 6, 2000, available at <http://www.christianitytoday.com/ct/2000/march6/7.80.html?start=2> (last visited Mar. 5, 2013) (discussing Thomas Wolfe’s account of Hart’s creation of *Ex Nihilo*).

21. See *THE SOUL OF CREATIVITY*, *supra* note 6, at 7, for a full discussion of Hartman’s story and its relevance for moral rights laws.

22. See *Exodus* 20:8–11; *Deuteronomy* 5:12.

23. ETZ HAYIM, *supra* note 1, at 11–12 (corresponds to *Genesis* 2:2–3).

The first recitation of the Decalogue in the Book of Exodus echoes this rationale for Shabbat by focusing on the element of holiness. God created the world in six days and hallows the seventh day by designating it as a day of rest.<sup>24</sup>

As discussed, the Jewish tradition sees man as obligated to mirror God, both with respect to the command to create and to cease creating on Shabbat. The Jewish tradition maintains that man is obligated to create in order to mirror the Divine,<sup>25</sup> and the same is true of resting on Shabbat. This interpretation of Shabbat not only emphasizes man's mirroring God but also the holiness of Shabbat since man sanctifies Shabbat and in doing so, mirrors God's hallowing the day of rest. From this perspective, any activity that evidences man's mastery over nature would be prohibited on Shabbat<sup>26</sup> since God refrained from exercising supremacy over space on the seventh day. Thus, Talmud Professor Joel Roth has observed that "if Creation establishes God's supremacy over space, *Shabbat* establishes God's supremacy over time."<sup>27</sup> He adds that these two markers, space and time, establish "the essence of biblical theology": "God is entirely free from any constraints of nature. God is the sovereign of space and time, and Shabbat is the symbol of that divine transcendence."<sup>28</sup>

Another theological basis for Shabbat derives from the second recitation of the Decalogue appearing in the Book of Deuteronomy. This text also emphasizes God freeing the Israelite people from slavery as a basis for observing Shabbat.<sup>29</sup> Daniel Nevins, the Dean of the Rabbinical School at the Jewish Theological Seminary, has written that although the precise connection between observing Shabbat and Israel's liberation from slavery is not discussed in the Torah, perhaps "the point of resting is . . . to inspire gratitude to God for our freedom."<sup>30</sup> The view in Deuteronomy seems to be more focused on the social value of Shabbat rather than the inherent holiness of the day.<sup>31</sup>

In addition, Nevins notes another theological basis for Shabbat. Drawing from the narrative in Exodus in which the Israelites are instructed to collect a double portion of *manna* on the sixth day so they can refrain from

24. See *Exodus* 20:11.

25. See *supra* notes 11–15 and accompanying text.

26. See Joel Roth, *Shabbat and the Holidays*, in ETZ HAYIM, *supra* note 1, at 1455, 1456 (noting that modern scholars are virtually agreed on this point).

27. *Id.* at 1455.

28. *Id.*

29. See ETZ HAYIM, *supra* note 1, at 1021 (corresponds to *Deuteronomy* 5:12–15).

30. Daniel S. Nevins, *The Use of Electrical and Electronic Devices on Shabbat*, THE RABBINICAL ASSEMBLY, 7–8, available at <http://www.rabbinicalassembly.org/sites/default/files/public/halakhah/teshuvot/2011-2020/electrical-electronic-devices-shabbat.pdf> (noting also that this explanation has been both approved and rejected by the traditional sources).

31. Roth, *supra* note 26, at 1455. Roth notes that "the two emphases are not mutually exclusive." *Id.*

gathering food on the day of rest,<sup>32</sup> Nevins asserts that “the purpose of Shabbat here seems to be an amplification of the lesson of manna—to foster a sense of trust in God’s reliability as a provider for the people’s physical sustenance.”<sup>33</sup> According to this view, Shabbat represents the ultimate sense of Israel’s trust in and reliance on God: “Into a world whose landscape is dominated by visible and massive monuments to human ingenuity and power, the Sabbath quietly but firmly brings the humbling and saving message of man’s dependence on God.”<sup>34</sup>

To moderns who are steeped in a philosophy of autonomy, the detailed rules and regulations of Shabbat appear foreign and burdensome. Many, if not most, people cannot understand the concept of “mandated” rest since they are accustomed to resting, and performing nearly all other activities, in response to their own internal desires and drives. Moreover, one might wonder how Shabbat differs from an ordinary vacation.

Significantly, the Torah establishes Shabbat as the cornerstone of Jewish life and law. As Nevins notes, “when Shabbat is observed as a day of intentional rest, it allows community to emerge”: the sanctification of Shabbat results in “something more than relaxation; it becomes an act of devotion, highlighting those values and relationships which have ultimate significance.”<sup>35</sup> Thus, throughout the ages, observance of Shabbat has been the hallmark of the Jewish tradition. The following part examines more fully the development of the laws concerning Shabbat observance.

## II. THE INSTITUTION AND DEVELOPMENT OF SHABBAT LAWS

*In the tempestuous ocean of time and toil there are islands of stillness where man may enter a harbor and reclaim his dignity. The island is the seventh day, the Sabbath, a day of detachment from things, instruments and practical affairs, as well as of attachment to the spirit.*<sup>36</sup>

The founder of the Cultural Zionist movement, writer Ahad Ha’am, once remarked that “more than Jews have kept the Sabbath, the Sabbath has kept the Jews.”<sup>37</sup> Although Ahad Ha’am was a secular Jew whose life

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32. See *Exodus* 16:22–30. The Israelites named the food God provided in the wilderness *manna*. The Torah describes it as “like coriander seed, white, and it tasted like wafers in honey.” ETZ HAYIM, *supra* note 1, at 418–419, (*Exodus* 16:31).

33. Nevins, *supra* note 30, at 8.

34. Morris Adler, Jacob Agus & Theodore Friedman, *Sabbath Responsum*, in 3 PROC. OF THE COMM. ON JEWISH LAW AND STANDARDS OF THE CONSERVATIVE MOVEMENT 1927–1970, at 1109, 1112 (David Golinkin ed., 1997).

35. Nevins, *supra* note 30, at 3.

36. ABRAHAM JOSHUA HESCHEL, *THE SABBATH* 20 (2003 ed.).

37. Ahad Ha’am, who lived in the nineteenth and early twentieth centuries, was the Hebrew pen name of Asher Zvi Hirsch Ginsberg. In Hebrew, his name means “One of the People.” See Hillel Halkin, *You Don’t Have to be Orthodox to Cherish the Sabbath*, JEWISH WORLD REVIEW, Dec. 13, 2002, available at <http://www.jewishworldreview.com/hillel/halkin121303.asp>.

spanned the second half of the nineteenth and early twentieth centuries, his observation still is widely quoted precisely because it evinces a reality for many Jews, not just those who are traditionally observant.<sup>38</sup>

The classical Jewish tradition assumed that, in addition to the Torah—the Written Law—God directly transmitted to Moses the Oral Law, which can be thought of, in part, as a type of guidebook to interpreting the text of the Written Law.<sup>39</sup> Due to concerns by the sages that the Oral Law could be forgotten due to its increasing voluminous nature as well as the massive efforts being made by the Romans to eradicate the teaching of Torah law, the Jewish sages began to write down the law in the early part of the Common Era. The Mishnah emerged around 200 C.E. as the initial agreed upon version of the Oral Law.<sup>40</sup> The Mishnah contains Torah teachings, non-Torah laws such as rabbinical enactments and even local customs. The codification process culminated around 500 C.E.<sup>41</sup> with the redaction of the Babylonian Talmud, regarded as the central book of Jewish law and life.<sup>42</sup>

Thus, Judaism as it exists today is largely a function of rabbinic creativity in the early centuries of the Common Era. This rabbinic creativity has continued throughout the centuries. Although the laws concerning Shabbat have been formulated over the centuries, today's modern technologies provide particular challenges. In discussing Shabbat specifically, two Orthodox scholars have remarked that throughout the centuries, technological advances have posed practical challenges to decisors of Jewish law, but the advances of modern technology have brought these challenges to an entirely different level.<sup>43</sup>

A reference to Shabbat appears numerous times throughout the Written Torah. As discussed, Shabbat is included in the two recitations of the Decalogue that incorporate the injunction to observe Shabbat in the Fourth Commandment.<sup>44</sup> In fact, observance of Shabbat is the only ritual included in the Decalogue.<sup>45</sup> Some of the passages of the Written Torah addressing the concept of Shabbat make explicit reference to the cycle of work, followed

38. *See id.*

39. Elliot Dorff, *Judaism as a Religious Legal System*, 29 HASTINGS L.J. 1331, 1350 n.70 (1978).

40. The Mishna is believed to have been edited by Rabbi Yehudah, the Prince. *See* Louis Ginzberg, *The Codification of Jewish Law*, in ON JEWISH LAW AND LORE 153, 161-62 (Atheneum 1981). Thus, the Mishnah can be considered the earliest sourcebook for the path that traditional Judaism has taken over the course of the centuries that followed its redaction.

41. *See* Steven H. Resnicoff, *Autonomy in Jewish Law—In Theory and in Practice*, 24 J.L. & RELIGION 507, 528 nn.112-13 (2009). An earlier Talmud, called the Jerusalem Talmud, also was redacted but it is not viewed with the same reverence as the Babylonian Talmud. *See* Stephen G. Wald, *Mishnah*, in 14 ENCYCLOPEDIA JUDAICA 319, 319-31 (Michael Berenbaum & Fred Skolnik eds., 2d ed. 2007).

42. Resnicoff, *supra* note 41, at 528-29; *see also* Dorff, *supra* note 39, at 1334 n.9.

43. Rabbi Michael Brojde & Rabbi Howard Jachter, *The Use of Electricity on Shabbat and Yom Tov*, J. HALAKHA AND CONTEMP. SOC'Y 4, 5 (1991).

44. *See Exodus* 20:8-11; *Deuteronomy* 5:12.

45. Nevins, *supra* note 30, at 7.



by rest. For example, in Exodus 23:12 the text states that labor may be done on six days “but on the seventh day you shall cease from labor, in order that your ox and your ass may rest, and that your bondman and the stranger may be refreshed.”<sup>46</sup> The clear implication of this verse is that the ability to rejuvenate is vital not just for man but also for beasts of burden.

A particularly interesting and relevant chapter from the Torah is Exodus 31. This chapter begins with God instructing Moses to single out as the supervisory master craftsman for the construction of the Tabernacle an Israelite named Bezalel, who has been endowed “with a divine spirit of skill, ability, and knowledge in every kind of craft; to make designs for work in gold, silver, and copper, to cut stones for setting and to carve wood—to work in every kind of craft.”<sup>47</sup> Bezalel and his associate Oholiab were assigned the task of supervising the construction of the Tabernacle and all of the accoutrements necessary for the service of God.<sup>48</sup> Significantly, an injunction for the Israelites to observe Shabbat appears following the delineation of all the artistic and other accessories necessary for the service of God.<sup>49</sup> The placement of this injunction to observe Shabbat immediately following the text concerning the creation of materials for worship by skilled craftsmen seems to be yet another reminder of the need for human rejuvenation following a period of active creativity. Moreover, humans are once again reminded to mirror the Divine in this regard. Indeed, the last verse of this section concerning Shabbat reads: “For in six days the Lord made heaven and earth, and on the seventh day He ceased from work and was refreshed.”<sup>50</sup>

#### A. *Prohibited Labors*

With respect to the question regarding exactly how Shabbat is to be observed, the Torah itself is rather sparse. The Torah explicitly prohibits burning wood, or any other combustible material, on Shabbat.<sup>51</sup> This prohibition of creating fire “is the Torah’s most clearly prohibited labor.”<sup>52</sup> Still, from a halakhic standpoint, the rabbinic tradition, as formulated in the Oral Law rather than the Torah itself, determines the particulars of how Shabbat is to be observed. Although the Torah generally prohibits performing “labor” on Shabbat and even specifies certain prohibited activities, the Mishnah enumerates “forty less one” specific labors that are proscribed on Shabbat.<sup>53</sup> The sages derived these thirty-nine prohibited tasks, known in

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46. ETZ HAYIM, *supra* note 1, at 473 (translating *Exodus* 23:12).

47. *Id.* at 527 (translating *Exodus* 31:3–5).

48. *Id.* at 527–28 (translating *Exodus* 31:7–11).

49. *Id.* at 529 (translating *Exodus* 31:16).

50. *Id.* (translating *Exodus* 31:17).

51. *See id.* at 553 (“You shall kindle no fire throughout your settlements on the sabbath day.”) (translating *Exodus* 35:3).

52. Nevins, *supra* note 30, at 22.

53. *Mishnah Shabbat* 7:2.

Hebrew as *avot m'lakhah*, from the principal categories of work necessary to construct the Tabernacle.<sup>54</sup> The following activities are prohibited according to the Mishnah:

[S]owing, ploughing, reaping, binding into sheaves, threshing, winnowing, fruit-cleaning, grinding, sifting, kneading, baking, wool-shearing, bleaching, combing, dyeing, spinning, warping, making two spindle-trees, weaving two threads, separating two threads (in the warp), tying a knot, untying a knot, sewing on with two stitches, tearing in order to sew together with two stitches, hunting deer, slaughtering the same, skinning them, salting them, preparing the hide, scraping the hair off, cutting it, writing two (single) letters (characters), erasing in order to write two letters, building, demolishing (in order to rebuild), kindling, extinguishing (fire), hammering, transferring from one place into another.<sup>55</sup>

Nevins explains the varied activities composing this list by noting that they reveal that the “rabbinic understanding of *melakhah* regards the transformation of material reality to serve the needs of civilized people for food, clothing, writing, shelter and tools.”<sup>56</sup>

In addition to the activities prohibited by the Mishnah, the sages added a long list of derivations (called *toledot*, meaning “offspring”) that they believed to “issue, like descendants” from these thirty-nine more general categories. These *toledot* are biblically forbidden because they accomplish a forbidden purpose via a mechanism distinct from that of the primary labor.<sup>57</sup> For example, planting is a prohibited *avot m'lakhah* and watering a plant is considered a prohibited derivative.<sup>58</sup> In other words, even if the physical mechanism differs from that of the primary prohibition, but the purpose and result are identical, a given activity is forbidden. Similarly, Jewish law considers any written language or symbolic system to be within the realm of the Mishnah’s prohibition of writing two letters on Shabbat,<sup>59</sup>

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54. See *infra* note 63 and accompanying text.

55. *Mishnah Shabbat* 7:2.

56. Nevins, *supra* note 30, at 10. The final enumerated labor prohibiting carrying from one domain to another may—at first glance—constitute an exception to this explanation. Nevins notes, however, that “[i]t may be that the transportation of tools is considered to be essential to the building process described in the prior set of categories, or that once an item is completed it is then carried for use.” *Id.* at 11. Thus, transporting goods from one domain to another “is ultimately a transformation of material reality and conforms to our general understanding of *melakhah*.” *Id.*

57. *Id.* at 27.

58. MICHAEL KATZ & GERSHON SCHWARTZ, *Shabbat*, in *THE OBSERVANT LIFE* 98, 127 (Martin S. Cohen, ed. 2012). Both planting (or sowing seeds) and watering “have the purpose of making a plant grow in the soil, but the mechanisms are physically distinct”; watering therefore is a “derivative labor sharing the same goal of causing plants to grow.” Nevins, *supra* note 30, at 13.

59. *Mishnah Shabbat* 12:3. The Mishnah’s “standard recalls the practice of marking the bottom of the planks for the Tabernacle with a two letter code.” Nevins, *supra* note 30, at 30. Moreover, this limitation is linked to the reality that the Hebrew language does not contain any single-letter words. *Id.*

and therefore today's normal method of writing with digital devices that are used to store and display information are banned.<sup>60</sup> Digital writing thus performs the same function as conventional writing, although the process differs.

Further, the sages enacted additional prohibitions called *sh'vut* that are designed to prevent inadvertent violations of the Shabbat rules.<sup>61</sup> The spirit of Shabbat is as important as the detailed legal regulations. Therefore, the permissibility of each human action is analyzed from the standpoint of two distinct questions: 1) does the action constitute *avot m'lakhah* or a prohibited derivative activity; and 2) does the action undermine *sh'vut*, which also extends to the spirit of rest that permeates Shabbat.<sup>62</sup>

The rules of observance are complex and a detailed treatment is beyond the scope of this paper. Still, based on these laws, it should be clear there is something inherently creative about *m'lakhah*. This observation is reinforced by the fact that the Hebrew term *m'lakhah* used by the sages in their discussion of activities prohibited on Shabbat is the same term used in Genesis 2:2-3 that is translated as "work" in the narrative discussing God's creating the world in six days and resting on the seventh day.<sup>63</sup> Further, the same term is used in connection with the Israelites' construction of the Tabernacle in the Book of Exodus.<sup>64</sup> In practical terms, any type of affirmative creativity resulting in a tangible expression is prohibited on Shabbat, including writing, drawing, painting, sculpting, playing instruments, sewing, constructing, repairing, improving, tearing, any activity having to do with earning money, any activity involving strenuous physical exertion, and using a computer or cell phone.<sup>65</sup>

### B. Prohibited Activity and Copyright Fixation

The type of creativity prohibited on Shabbat is one that transforms material reality rather than "the creativity of song, speech and other expressions of emotion and ideas."<sup>66</sup> There is a fascinating parallel between the nature of prohibited activity on Shabbat and the "fixation" requirement of copyright law in the United States. The 1976 Copyright Act provides that in order to be protected under the statute, a work must be "fixed in any tangible medium of expression."<sup>67</sup> This requirement arguably embodies a con-

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60. Nevins, *supra* note 30, at 31.

61. Roth, *supra* note 26, at 1456. This category is also "designed to protect the special atmosphere of Shabbat." Nevins, *supra* note 30, at 6.

62. Nevins, *supra* note 30, at 3.

63. See *supra* notes 6-7, & 23 and accompanying text.

64. See ETZ HAYIM, *supra* note 1, at 556-59 (translating *Exodus* 36).

65. See Katz & Schwartz, *supra* note 57, at 127-28 (citing RABBI SAMUEL DRESNER, THE SABBATH 81 (1970)).

66. Nevins, *supra* note 30, at 7.

67. Copyright Act of 1976, 17 U.S.C. § 102(a) (2006).

cern for proof in infringement situations,<sup>68</sup> but it is not applied universally.<sup>69</sup> Examples of works that are excluded from protection include an improvised dance or speech, absent someone filming the work pursuant to the direction of the creator. Interestingly, the creation of works that are not “fixed” lack the ability to transform material reality, and thus also are permitted on Shabbat.

According to the 1976 Act, a work is considered “fixed” when it “is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration.”<sup>70</sup> In applying the fixation requirement of copyright law, the scope of this durational requirement has been the subject of much litigation, especially in the age of digital copyright infringement. The case law involving video games reveals that long-term duration is not necessarily a requirement for fixation,<sup>71</sup> as does the case law concerning representations created in the RAM.<sup>72</sup> Other cases have come out differently.<sup>73</sup>

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68. See 2 WILLIAM F. PATRY, PATRY ON COPYRIGHT § 3:22 (2012) (suggesting that fixation eases “problems of proof of creation and infringement”). The concept of “fixation” is not necessarily coterminous with the constitutional predicate of a “writing.” See Laura A. Heymann, *How to Write a Life: Some Thoughts on Fixation and the Copyright/Privacy Divide*, 51 WM. & MARY L. REV. 825, 844–46, 853 (2009) (providing a similar argument on this point). Heymann’s thesis is that the fixation requirement represents not a constitutional mandate but rather “a deliberate decision on the part of Congress to afford protection only to certain types of artistic endeavors—those that can be propertized and thus subject to the economic incentives at the heart of copyright law.” *Id.* at 849.

69. The Berne Convention for the Protection of Literary and Artistic Works, which the United States joined in 1988, gives participating countries the option to include a fixation requirement in their copyright laws. See Berne Convention for the Protection of Literary and Artistic Works art. 2(2), Sept. 9, 1886, *as last revised* July 24, 1971 and *amended* Sept. 28, 1979, 1161 U.N.T.S. 30 (“It shall, however, be a matter for legislation in the countries of the Union to prescribe that works in general or any specified categories of works shall not be protected unless they have been fixed in some material form.”).

70. 17 U.S.C. § 101 (providing the definition of “fixed”).

71. See, e.g., *Williams Elecs., Inc. v. Artic Int’l, Inc.*, 685 F.2d 870, 873–74 (3d Cir. 1982) (rejecting the argument that video game graphics are “transient” and therefore not fixed for purposes of copyright protection); *Stern Elecs., Inc. v. Kaufman*, 669 F.2d 852, 853–54 (2d Cir. 1982) (affirming the copyrightability of video games despite variability of images on the screen depending on actions of a given player); *Midway Mfg. Co. v. Dirkschneider*, 543 F. Supp. 466, 480 (D. Neb. 1981) (holding that Plaintiff’s coin-operated video games, an “audiovisual work,” were fixed in printed circuit boards—“tangible objects from which the audiovisual works may be perceived for a period of time more than transitory.”).

72. See *Mai Sys. Corp. v. Peak Computer, Inc.*, 991 F.2d 511, 518 (9th Cir. 1993) (holding that loading a computer program into RAM constituted fixation because it was capable of being perceived by computer technicians for diagnostic purposes).

73. See *Cartoon Network, LP v. CSC Holdings, Inc.*, 536 F.3d 121, 130 (2d Cir. 2008) (holding that data stored for 1.2 seconds in a cable company’s Broadband Media Router was not sufficiently fixed so as to constitute a “copy”); *CoStar Group, Inc. v. LoopNet, Inc.*, 373 F.3d 544, 551 (4th Cir. 2004) (holding that an Internet Service Provider could not be held liable for direct copyright infringement when its servers were used to upload infringing photographs because its servers were mere conduits for transmission and “[w]hile temporary electronic copies may be made in this transmission process, they would appear not to be ‘fixed’ in the sense that they are ‘of more than

By way of comparison, Jewish law contains a parallel discussion concerning the requirement that a writing must be durable in order to violate the Shabbat prohibition. Thus, although the Mishnah exempts from liability for violating Shabbat anyone who “[wrote] with dark liquids, with fruit juice, or in road-dust, in fine sand, or in anything that does not retain the writing,”<sup>74</sup> the rabbis still prohibited writing on Shabbat in the sand.<sup>75</sup> In the same way, the creation of written images that are set to automatically erase after a brief period would still be considered a prohibited activity.<sup>76</sup>

### C. Permitted Creativity on Shabbat

This comparison with the fixation requirement illustrates that the laws of Shabbat do not prohibit creativity per se, just as works that are not fixed for purposes of copyright law still can manifest substantial creativity.<sup>77</sup> Thus, as long as writing in any form does not take place, it is not prohibited to exhibit intellectual creativity on Shabbat, particularly in connection with activities that foster the refinement of new conceptual understandings of Jewish law or that devise new solutions to ostensible contradictions in the law. This point is underscored by the Talmudic perspective of Rabbi Shimon ben Lakish, who taught that the cessation of physical labor on Shabbat leads to the gift of an “additional soul” on Shabbat.<sup>78</sup> In the Jewish tradition, the concept of “soul” has been linked to creativity.

In the second chapter of Genesis, the translation tells us that “the LORD God formed man from the dust of the earth. He blew into his nostrils the breath of life, and man became a living being.”<sup>79</sup> The renowned Jewish commentator Nahmanides<sup>80</sup> interprets this passage as meaning that God blew his own breath into Adam’s nostrils.<sup>81</sup> God’s breath is understood to mean “the soul of life,”<sup>82</sup> thus establishing the way in which the creation of

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transitory duration”); see generally Aaron Perzanowski, *Fixing RAM Copies*, 104 NW. U. L. REV. 1067 (2010) (providing an in-depth discussion of this issue).

74. *Mishnah Shabbat* 12:4.

75. See Nevins, *supra* note 30, at 34.

76. See *id.* (referring specifically to the current version of e-readers whose screen-view will auto-erase within a few minutes).

77. This concept is explored more fully in Roberta Rosenthal Kwall, *The Lessons of Living Gardens and Jewish Process Theology for Authorship and Moral Rights*, 14 VAND. J. ENT. & TECH. L. 889 (2012).

78. Babylonian Talmud *Beitzah* 16a.

79. ETZ HAYIM, *supra* note 1, at 13 (corresponds to *Genesis* 2:7).

80. Nahmanides, who lived in the thirteenth century, is also referred to as the Ramban.

81. RAMBAN (NACHMANIDES), COMMENTARY ON THE TORAH: GENESIS 66 (Charles B. Chavel trans., 1971) [hereinafter RAMBAN]; see also RABBI YAAKOV CULI, THE TORAH ANTHOLOGY MEAM LO’EZ BOOK ONE 245 (Aryeh Kaplan trans., 1977) (corresponds to *Genesis* 2:7); THE CHUMASH: THE STONE EDITION, *supra* note 12, at 11 (corresponds to *Genesis* 2:7).

82. CULI, *supra* note 81, at 245; RASHI, *supra* note 16, at 23.

human beings differs from all other creations.<sup>83</sup> Moreover, the purpose of this special soul was to enable man to speak and express himself.<sup>84</sup> Rashi, the celebrated eleventh-century French biblical commentator, explains that the soul of man is more alive than the souls of animals because man's soul contains the powers of speech and reasoning.<sup>85</sup>

Finally, Jewish law authorities widely believe that "the seventh day has long functioned as an incubator for the most spiritually creative and productive hours of the week."<sup>86</sup> The Torah itself provides the blueprint for this idea by its numerous references to being "refreshed" during Shabbat.<sup>87</sup> In the twentieth century, Rabbi Mordecai Kaplan, the founder of the Reconstructionist Movement, specifically acknowledged how Shabbat facilitates human creativity in the coming week just as an artisan must retract from his painting to contemplate his next creative steps.<sup>88</sup> The following part demonstrates how the psychological literature reinforces the significance of Shabbat by emphasizing the importance of a break period.

### III. CREATIVITY THEORY AND THE SIGNIFICANCE OF INCUBATION

*[C]reativity is a quest for meaning . . . . [A]n attempt to penetrate the mystery of the self, and perhaps the even greater mystery of Being.*<sup>89</sup>

History is filled with stories about famous personalities resorting to a period of rest which resulted in their achieving a resolution to what was previously unsolvable. One example involves Archimedes, the renowned Greek mathematician, who was asked to determine whether a particular gold crown given to the king as a gift was made of pure gold. He knew that

83. According to classical Jewish belief, although man was created alive, his true form was not attained until God took this further step of infusing him with the soul. CULI, *supra* note 81, at 245; *see also* RAMBAN, *supra* note 81, at 66 (discussing the creation of man's soul).

84. Onkelos, the Roman convert to Judaism who wrote an Aramaic translation of the Five Books of Moses in the second century, translates the words "living being" found in the second Creation narrative as "a speaking spirit." THE CHUMASH: THE STONE EDITION, *supra* note 12, at 11 (commentary on *Genesis* 2:7). Onkelos thus describes God's endowing man with the ability to speak as the purpose of this special soul. Of course, the speech parallels between God and man also have relevance for the mirroring argument discussed in connection with the first Creation narrative. *See supra* notes 10–15 and accompanying text.

85. RASHI, *supra* note 16, at 23–24 (corresponds to *Genesis* 2:7); *see also* CULI, *supra* note 81, at 245; *cf.* MAURICE MERLEAU-PONOTY, PHENOMENOLOGY OF PERCEPTION 178–79 (Forrest Williams trans., Routledge & Kegan Paul Ltd. 1962) (1976) (likening authentic speech, that which is the creative, original descriptions of feelings, to the expression of artists); Russ VerSteeg, *Defining "Author" for Purposes of Copyright*, 45 AM. U. L. REV. 1323, 1339, 1365 (1996) (affirming communication as the essential component of authorship).

86. Nevins, *supra* note 30, at 7.

87. *See supra* note 46 and accompanying text (discussing *Exodus* 23:12); *see also Exodus* 31:17 (noting that on the seventh day the LORD ceased from labor and was refreshed).

88. *See* MORDECAI M. KAPLAN, THE MEANING OF GOD IN MODERN JEWISH RELIGION 59–63, 81–83, 90–91, 96–103 (Jewish Reconstructionist Found., Inc. 1947) (1937).

89. FRANK BARRON, *Introduction to CREATORS ON CREATING* 1, 2 (Frank Barron et al. eds., 1997).

he could provide an answer if he was able to determine the volume of the crown since he could then measure that against an equal volume of pure gold. Unfortunately, however, the crown was of an irregular shape and did not lend itself to being measured in volume. Frustrated, the mathematician put the problem aside and took a bath: “As he lowered himself into the tub, Archimedes noticed the bath water rise, and it suddenly occurred to him that the displacement of bath water must be exactly the same as the volume of his body.”<sup>90</sup> He realized that to solve his dilemma, he only needed to drop the crown into a tank of water and measure the water’s displacement. According to legend, he “was so elated by his sudden discovery that he leapt out of the bath and ran naked through the streets shouting Eureka! (I have found it!).”<sup>91</sup>

#### A. *Significance of Incubation*

Individual artists and other creators attest to the “gestational period” underscoring creativity—that timeframe in which the creative juices flow internally, almost imperceptibly.<sup>92</sup> Henry Miller’s observation is characteristic of this view: “The best thing about writing is not the actual labor of putting word against word, brick upon brick, but the preliminaries, the spade work, which is done in silence, under any circumstances, in dream as well as in the waking state.”<sup>93</sup> This inner labor—termed “the unconscious machine” by mathematician Henri Poincaré—is what creators underscore as the pivotal component of creativity.<sup>94</sup> Poet Amy Lowell similarly noted that a poet “is something like a radio aerial—he is capable of receiving messages on waves of some sort; but he is more than an aerial, for he possesses the capacity of transmuting these messages into those patterns of words we call poems.”<sup>95</sup> Similarly, Bertrand Russell has emphasized “the fruitless effort he used to expend in trying to push his creative work to completion by sheer force of will before he discovered the necessity of

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90. Craig A. Kaplan & Janet Davidson, *Hatching a Theory of Incubation Effects*, in *ARTIFICIAL INTELLIGENCE AND PSYCHOL. PROJECT 3*, 3 (Carnegie Mellon Univ. Technical Report AIP – 98, 1989).

91. *Id.*; see also *id.* at 8 (discussing how Benjamin Franklin might have resorted to a different form of respite before devising the idea of sending a kite into an electrical storm in order to test his theory that lightening was electricity).

92. See generally JOHN S. DACEY & KATHLEEN H. LENNON, *UNDERSTANDING CREATIVITY* 39 (1998) (discussing Carl Jung’s theory that high-level creativity involves the unconscious).

93. HENRY MILLER, *Why Don’t You Try To Write?*, in *CREATORS ON CREATING*, *supra* note 89, at 27–28.

94. Henri Poincaré, *Mathematical Creation*, in *THE CREATIVE PROCESS* 22, 27 (Brewster Ghiselin ed., 1952); see also LEWIS HYDE, *THE GIFT: IMAGINATION AND THE EROTIC LIFE OF PROPERTY* 51 (1983) (distinguishing work from labor and noting that labor is “bound up with feeling” and “interior”).

95. Amy Lowell, *The Process of Making Poetry*, in *THE CREATIVE PROCESS*, *supra* note 94, at 110.

waiting for it to find its own subconscious development.”<sup>96</sup> These observations from creators representing a broad spectrum of disciplines demonstrate belief in the universality of “hidden organic development at some stage of the creative process.”<sup>97</sup>

Scientists also have focused on this internal dimension of creativity in order to understand the precise nature of its function and operation. In the early twentieth century, Graham Wallas laid the groundwork for future psychological studies of the relationship between an incubation period and active creativity. Wallas offered a multi-stage theory of creativity that has remained a seminal work despite the relative lack of empirical verification.<sup>98</sup> His proposed four-stage model includes the following elements: (a) preparation, (b) incubation, (c) illumination, and (d) verification.<sup>99</sup> According to Wallas, preparation represents the conscious stage of a problem’s investigation, illumination marks the appearance of the solution, and verification involves the testing of the idea’s validity and its reduction to an exact form.<sup>100</sup> The second component, incubation, emphasizes nonconscious processing as a key factor in creative output<sup>101</sup> and is the focus of subsequent creativity theory research as well as the discussion here.

Wallas observed that the voluntary abandonment of problems for a period of time yields more productive results than if problems are completed in one sitting. He illustrates this point by discussing “an academic psychologist, who was also a preacher,” who believed “that his [weekly] sermon was much better if he posed the problem” to be discussed the prior Monday rather than later in the week, despite devoting the same number of conscious hours to the endeavor.<sup>102</sup> Wallas attributed tremendous importance to this preacher’s practice of beginning a project and setting it aside for periods of reflection, especially in connection with “the more difficult forms of creative thought, the making for instance, of a scientific discovery, or the writing of a poem or play.”<sup>103</sup> Wallas writes that in these instances “it is desirable not only that there should be an interval free from conscious thought on the particular problem concerned, but also that the interval

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96. Brewster Ghiselin, *Introduction to THE CREATIVE PROCESS*, *supra* note 94, at 1, 16; *cf.* Rainer Maria Rilke, *Letters to Merline*, in *CREATORS ON CREATING*, *supra* note 89, at 53 (“Please do not expect me to speak to you of my inner labor—I must keep it silent . . .”).

97. Ghiselin, *supra* note 96, at 16. *See also* KWALL, *supra* note 6, at 11–22 (identifying other creators and noting their experiences with the creative process).

98. Jason Gallate, Cara Wong, Sophie Ellwood, R.W. Roring & Allan Snyder, *Creative People Use Nonconscious Processes to Their Advantage*, 24 *CREATIVITY RES. J.* no. 2–3, 2012, at 146, 146.

99. *See* GRAHAM WALLAS, *THE ART OF THOUGHT* 80–81 (1926) (drawing upon the work of Helmholtz, a German physicist, for the first three stages and adding the fourth stage of verification).

100. *Id.*

101. *See id.* at 94 (drawing on the observations of Henri Poincaré).

102. *Id.* at 86–87.

103. *Id.* at 87.



should be so spent that nothing should interfere with the free working of the unconscious or partially conscious processes of the mind.”<sup>104</sup>

Wallas’s focus on the incubation period and its unconscious component of creativity has received significant attention in psychological research, particularly in the late twentieth and early twenty-first centuries. This importance is illustrated by a 2009 search by two researchers in Google Scholar “for the term *incubation* along with either *creativity*, *insight*, or *problem*,” resulting in the appearance of 5,510 articles. This search included the ten-year period of 1997-2007 and was limited to the subject areas of arts, humanities, and the social sciences.<sup>105</sup>

Although the anecdotal evidence concerning the importance of incubation is abundant, substantiation from empirical evidence in the laboratory has been more difficult to obtain.<sup>106</sup> Part of the difficulty is that early on, researchers generally used “so-called insight problems” with “only one specific and often counterintuitive solution, causing a ‘Eureka experience’ once found.”<sup>107</sup> The problem, however, is that solutions to these insight problems are difficult to find, and experiment participants were often given very short time frames for a solution compared to the reality of exercising creativity in real life.<sup>108</sup>

In 2008, researchers attempted to probe the lack of empirical support for the incubation effect by introducing “a distinction between thought process and outcome.”<sup>109</sup> They proposed “that incubation in the context of creativity and problem solving should be [understood] as a two-step process: first, unconscious thought associates and creates the novel idea or solution to a problem; second, this solution is transferred to consciousness.”<sup>110</sup> Based on this, and other research, the importance of unconscious processing has become a focus in creativity theory research.

Post-behaviorism, many psychologists have sought to discount the incubation effect by claiming that the value of a break is simply in the ability to recover from fatigue. Specifically, this recovery explanation states “that a

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104. *Id.* Wallas also noted that this “stage of Incubation should include a large amount of actual mental relaxation.” *Id.*

105. Ut Na Sio & Thomas C. Ormerod, *Does Incubation Enhance Problem Solving? A Meta-Analytic Review*, 135 *PSYCH. BULL.*, no. 1, 2009, at 94, 94. The authors also observed that the search produced an additional 1,970 articles when the subject areas were broadened to include business, administration, and economics. *Id.*

106. Ap Dijksterhuis & Teun Meurs, *Where Creativity Resides: The Generative Power of Unconscious Thought*, 15 *CONSCIOUSNESS AND COGNITION* 135, 136 (2004).

107. *Id.*

108. *Id.*; See also Simone M. Ritter, Rick B. van Baaren & Ap Dijksterhuis, *Creativity: The Role of Unconscious Processes in Idea Generation and Idea Selection*, 7 *THINKING SKILLS AND CREATIVITY* 21, 22 (2012) (noting the lack of “sound empirical support for the beneficial effect of unconscious processes on creative performance.”).

109. Chen-Bo Zhong, Ap Dijksterhuis & Adam D. Galinsky, *The Merits of Unconscious Thought in Creativity*, 19 *PSYCHOL. SCI.*, 912, 913 (2008).

110. *Id.*

break relieves neural fatigue with an individual, providing . . . renewed energy to attempt a solution.”<sup>111</sup> Another explanation of the incubation effect is that it provides relief from “functional fixedness.” This view claims that “a rest allows individuals to break their mindset, to restructure the problem and approach it differently,” by reducing the retention of recent inappropriate strategies or facilitating the selective forgetting of “less useful memories in favor of more relevant ones.”<sup>112</sup> In other words, putting a problem aside for a period of time assists in finding creative solutions “as it allows for a fresh, unbiased and new look at a problem and reduces associations with incorrect answers, allowing correct ones to surface.”<sup>113</sup> Although these explanations focus on the passive role of unconscious processing, more recent research demonstrates that incubation may actively contribute to problem solving.<sup>114</sup>

### B. *Unconscious Thought*

Recent research raises the question of how unconscious activity actively contributes to problem solving. Indeed, there is a growing body of research evidence concerning “the boundary conditions of unconscious thought.”<sup>115</sup> In 2004, Ap Dijksterhuis and Teun Meurs published a paper that attempted to establish why unconscious thought is better in some ways in eliciting creativity than conscious thought. Their findings support the idea that unconscious thought is aimed at psychological processes associated with “decision making, choosing, impression formation, and creativity.”<sup>116</sup> In their opinion, unconscious thought, which is “reminiscent of lay people’s idea of ‘sleeping on it,’” prompts “ideas that are less obvious, less accessible and more creative.”<sup>117</sup> They conclude “[u]pon being confronted with a task that requires a certain degree of creativity, it pays off to delegate the labor of thinking to the unconscious mind.”<sup>118</sup>

Subsequently, Dijksterhuis and Loran Nordgren amplified this research by exploring the relative strengths and weaknesses of unconscious as opposed to conscious thought. They define conscious thought as occurring

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111. Sophie Ellwood, Gerry Pallier, Allan Snyder & Jason Gallate, *The Incubation Effect: Hatching a Solution?*, 21(1) CREATIVITY RES. J., no. 1, 2009, at 6, 8.

112. *Id.*

113. Ritter, van Baaren & Dijksterhuis, *supra* note 108, at 22. This process also is known as set-shifting. *Id.*

114. *See id.*; Dijksterhuis & Meurs, *supra* note 106, at 144. *But see* Ellwood, Pallier, Snyder & Gallate, *supra* note 111, at 12 (demonstrating support for the benefits of a break during which time one works on a completely different task but leaving open the question of whether these benefits are attributable to relief from fatigue or nonconscious idea generation).

115. Haiyang Yang, Amitava Chattopadhyay, Juangjie Zhang & Darren W. Dahl, *Unconscious Creativity: When can Unconscious Thought Outperform Conscious Thought?*, 22 J. CONSUMER PSYCHOL. 573, 579 (2012).

116. Dijksterhuis & Meurs, *supra* note 106, at 144.

117. *Id.* at 145.

118. *Id.*

“while the object or task is the focus of one’s conscious attention,” whereas unconscious thought constitutes either thought without attention, or with “attention directed elsewhere.”<sup>119</sup> In general, they conclude that unconscious thought is “an active, generative, and creative mode of thought” that is superior to conscious thought in many respects, particularly for complex problems.<sup>120</sup> They stress that most people believe that unconscious processing which follows a period of initial conscious thought tends to produce truly creative or unique insights. During this unconscious phase, the problem is laid to rest at least on a conscious level.<sup>121</sup>

Dijksterhuis and Nordgren’s articulation of the “convergence-versus-divergence principle” is the most significant finding for purposes of this discussion because of its particular relevance to creativity. Specifically, they posit that “consciousness generates thoughts or ideas in a very focused and convergent way, whereas the unconscious is more divergent, which increases the probability of generating creative and unusual ideas.”<sup>122</sup> In other words, unconscious thought promotes greater creativity because it “ventures out to the dark and dusty nooks and crannies of the mind.”<sup>123</sup> Also, “unconscious deliberation has been conceptualized as a proactive and goal-driven process,” thus suggesting “that thinking unconsciously may help people boost creative performance.”<sup>124</sup>

Although some disagree with or question these findings concerning unconscious thought,<sup>125</sup> more recent research has supported these theories.<sup>126</sup> The most promising research focuses specifically on the connection between unconscious thought and creativity. However, the current literature does not clarify conclusively the conditions in which unconscious thought outperforms conscious thought with respect to creative tasks.<sup>127</sup> Still, recent studies provide interesting insights on the relationship between unconscious thought and enhanced creativity.

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119. Ap Dijksterhuis & Loran F. Nordgren, *A Theory of Unconscious Thought*, 1 PERSP. ON PSYCHOL. SCI. no. 2, June 2006, at 95, 96.

120. *Id.* at 104, 108.

121. *Id.* at 102.

122. *Id.*

123. *Id.* (quoting Dijksterhuis & Meurs, *supra* note 106, at 138).

124. Yang, Chattopadhyay, Zhang & Dahl, *supra* note 115, at 574.

125. See Mark Nieuwenstein & Hedderik van Rijn, *Further Replication Failures From a Search for Confirmatory Evidence*, 7 JUDGMENT AND DECISION MAKING 779, 779 (2012), available at <http://journal.sjdm.org/12/12822/jdm12822.pdf> (failing to substantiate the unconscious thought advantage but suggesting that females may be more susceptible to its influence).

126. See Zhong, Dijksterhuis & Galinsky, *supra* note 109, at 912, 915 (“Our experiment . . . provides direct evidence for the causal relationship between unconscious thought and increased solution-related activation.”).

127. Yang, Chattopadhyay, Zhang & Dahl, *supra* note 115, at 573.

### 1. *Idea Selection and the Creative Inclination Advantage*

Creativity includes both idea generation as well as identification of the best single option.<sup>128</sup> Unconscious thought may benefit either stage of creativity: in the idea generation phase, “unconscious deliberation generates creative ideas through the ‘deep activation’ of mental constructs associated with the target task, and in the second phase, the fruits of the unconscious labor are outputted.”<sup>129</sup> A recently published co-authored paper suggests that “the beneficial effect of unconscious processes on creative performance is especially visible” during the second stage involving idea selection.<sup>130</sup> The findings revealed that although “individuals did not generate more creative ideas after unconscious thought than after conscious thought,” those “individuals who thought about their ideas unconsciously had an important advantage—they performed better than conscious thinkers in recognizing their most and least creative idea.”<sup>131</sup> These authors posit that their findings may partially “explain why anecdotes of creative people, which rely on real life creativity and, therefore, on idea generation as well as on idea selection, support the role of the unconscious in creativity, whereas scientific studies, which mainly focus on idea generation, provide only weak evidence.”<sup>132</sup> They ultimately conclude that “the unconscious mind plays a vital role in creative performance” since “the ability to recognize one’s most creative idea is crucial for the implementation of creative ideas.”<sup>133</sup> These findings are very significant with respect to everyday creativity since they offer a way to increase people’s idea selection capabilities that are vital to creative endeavors.<sup>134</sup>

Another recently published co-authored paper demonstrates that highly creative people gain “greater advantage from nonconscious processing than less creative people.”<sup>135</sup> Their findings also comport with the anecdotal literature on “eureka” moments as well as the evidence suggesting “that prodigiously creative people appear to be spontaneous” due to their production of solutions “at unexpected times and seemingly out of nowhere.”<sup>136</sup> According to the authors, however, this seeming spontaneity “might not be the result of creation *ex nihilo* or of innate superior talent, but actually the result of the prodigiously creative person working on outstanding problems

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128. Ritter, van Baaren & Dijksterhuis, *supra* note 108, at 22.

129. Yang, Chattopadhyay, Zhang & Dahl, *supra* note 115, at 574. These authors note that although the output phase typically is a conscious process, its performance is impacted by the duration of the unconscious thought process. *See infra* notes 153–55 and accompanying text.

130. Ritter, van Baaren & Dijksterhuis, *supra* note 108, at 22.

131. *Id.* at 26.

132. *Id.*

133. *Id.*

134. *Id.*

135. Gallate, Wong, Ellwood, Roring & Snyder, *supra* note 98, at 147.

136. *Id.* at 149.

consistently at a level below the consciousness awareness.”<sup>137</sup> Significantly, they observe that:

[O]ne important implication of this phenomenon is that creativity takes time and potentially unconscious work, and that *people who wish to be more productively creative should expose themselves to problems but not expect to solve them immediately; rather they should be comfortable with unresolved problems and open to unexpected/divergent solutions.*<sup>138</sup>

Moreover, the authors recommend “increasing the opportunities for people to nonconsciously process problems” and giving them time to incubate solutions as a means for benefitting people, particularly creative people.<sup>139</sup>

Other research also demonstrates that individuals solving creative types of problems are more likely to benefit from an incubation period than people solving linguistic and visual problems. Ut Na Sio and Thomas Ormerod suggest that the reasons for this finding are attributable to the multiple solution nature of creative problems. They observe that “[w]hen solving a creative problem, individuals benefit from performing a wide search of their knowledge to identify as many relevant connections as possible with the presented stimuli.”<sup>140</sup> “[E]ach time [people] reapproach the problem, they improve their performance by extending the search to previously unexplored areas of their knowledge network.”<sup>141</sup> They conclude that “[i]ncubation appears to facilitate the widening of search of a knowledge network in this fashion.”<sup>142</sup> These findings also seem to reinforce the divergent nature of nonconscious processing.<sup>143</sup>

## 2. *Mind Wandering, Incubation Durations, and Cyclicity*

The significance of mind wandering during the incubation process is another element that has been the focal point of recent research. Several researchers believe that “mind wandering could be linked to enhanced creativity, particularly for problems that have been previously encountered.”<sup>144</sup> A recent study provides “arguably the most direct evidence to date that conditions that favor mind wandering also enhance creativity.”<sup>145</sup> This

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137. *Id.*

138. *Id.* at 149–150 (emphasis added).

139. *Id.* at 150.

140. Sio & Ormerod, *supra* note 105, at 107.

141. *Id.*

142. *Id.*

143. *See supra* notes 122–123 and accompanying text.

144. Benjamin Baird, Jonathan Smallwood, Michael D. Mrazek, Julia W. Y. Kam, Michael S. Franklin & Jonathan W. Schooler, *Inspired by Distraction: Mind Wandering Facilitates Creative Incubation*, 23 ASSOCIATION FOR PSYCHOL. SCIENCE 1117, 1117 (2012), available at <http://pss.sagepub.com/content/23/10/1117>.

145. *Id.* at 1121.

study posits that mind wandering is a feature that may characterize successful incubation intervals.<sup>146</sup> The explanation for these findings may relate to the research demonstrating that incubation effects “are greater when individuals are occupied by an undemanding task than when they engage in either a demanding task or no task at all,”<sup>147</sup> a point also underscored in this study.<sup>148</sup> The authors affirmed that this phenomenon “was observed only for repeated-exposure problems, which demonstrates that it resulted from an incubation process rather than a general increase in creative problem solving.”<sup>149</sup> Thus, their data supports the idea that “specific types of unrelated thought facilitate creative problem solving.”<sup>150</sup> Significantly, the authors also emphasize that the “undemanding-task condition” was “characterized by high levels of mind wandering.”<sup>151</sup> Based on these findings, they conclude that “creative problem solutions may be facilitated specifically by simple external tasks (i.e., tasks not related to the primary task) that maximize mind wandering.”<sup>152</sup>

Recent research also has focused on the optimal duration for incubation. One study concerned with consumer psychology focuses specifically on whether and how different durations of unconscious versus conscious deliberation affect creativity.<sup>153</sup> The authors’ findings support the view that an inverted-U shaped relationship exists between the duration of unconscious thought and creativity performance. Unconscious processing generates mental constructs that can be retrieved in the output phase of creativity. If the unconscious phase is too short, too few constructs will be generated. On the other hand, because the activation of these mental constructs decays rapidly, they will no longer be as available for retrieval if the unconscious phase is too long. Thus, the study concludes that “creative output is maximized when the duration of unconscious thought is moderate,” although the study acknowledges that “the appropriate amount of duration depends on the specific creativity task, as different tasks require different amounts of minimum mental effort.”<sup>154</sup> The authors of this study concerning duration acknowledge, however, that their “findings suggest that incubating for a long period of time could be suboptimal and reduce the likelihood of epiphany.”<sup>155</sup>

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146. *Id.*

147. *Id.*

148. *Id.* at 1120.

149. Baird, Smallwood, Mrazek, Kam, Franklin & Schooler, *supra* note 144, at 1120.

150. *Id.*

151. *Id.*

152. *Id.* The authors note that additional “research is needed to determine precisely why the unrelated thoughts that occur during mind wandering uniquely facilitate incubation.” *Id.* at 1121.

153. Yang, Chattopadhyay, Zhang & Dahl, *supra* note 115, at 573.

154. *Id.* at 575. In the experiments performed in this study, the optimal deliberation period was three minutes, as opposed to one minute or five minutes. *Id.* at 579.

155. *Id.* at 579.

Another interesting theme in the psychological literature concerns the sequencing of unconscious thought with respect to conscious thought. The literature demonstrates that the superiority of unconscious thought processing depends upon an earlier phase of information acquisition, during which time conscious processes are superior.<sup>156</sup> As one team of researchers observed: “[w]ithout conscious learning and thought . . . artists would [be] lost in the vast array of options available; without goals, inattention is simply walking in darkness.”<sup>157</sup> Based on their research, this same team also posited that a period of unconscious thought should perhaps be followed by a subsequent period of conscious thought to “increase the probability” that “creative ideas given increased accessibility by unconscious thought will spring forth into consciousness.”<sup>158</sup> The implications of this proposed cyclicity, along with the other themes explored in this part, will be considered in the section below which relates these psychological findings to the observance of Shabbat.

#### IV. CONCLUSION: INCUBATION AND SHABBAT

Dijksterhuis and Nordgren posit the following scenario of unconscious thought processes “telling you they achieved a solution”:

You are planning to start writing your next article, and although you have some ideas about what to write in the introduction, things are still a bit fuzzy. You still have to make decisions. . . . And then, at some point, you suddenly know exactly what to do. . . . Sometimes such bursts of inspiration come at awkward moments, such as when you are grocery shopping. You are not able to write things down while your unconscious is strongly pushing you to do so. All you can do is hurry home . . . desperately hoping you do not lose these “great” thoughts before you can write them down. And then, at home, you sit down and write, and in a few minutes, you have basically shaped your introduction. You still have to do the actual writing of course, but you know exactly how it will unfold.<sup>159</sup>

Although shopping in a grocery store is not permissible on Shabbat, for those who observe the Sabbath day in a traditional form this scenario is nonetheless very familiar. Shabbat is a day designated for prayer, singing, festive meals, contemplation, Torah study, and spending time with family and friends without distractions. The day also is conducive to taking a *shab-*

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156. See Dijksterhuis & Nordgren, *supra* note 119, at 106. See also Zhong, Dijksterhuis & Galinsky, *supra* note 109, at 917 (“unconscious thought cannot ‘create’ knowledge; conscious learning and processing are needed to establish a knowledge base”).

157. Zhong, Dijksterhuis & Galinsky, *supra* note 109, at 917.

158. *Id.*

159. Dijksterhuis & Nordgren, *supra* note 119, at 107–08.

*bos schluf* (a Shabbat nap), and this practice is common among observant Jews.<sup>160</sup>

From twenty minutes before sundown on Friday evening to an hour after sundown on Saturday night,<sup>161</sup> one is commanded to refrain from using computers and other forms of electronic writing as well as other technological and traditional forms of communication and creation. In short, Shabbat is a mandated twenty-five hour period of incubation that occurs once a week. Although one cannot actively work on projects, thoughts of ongoing projects nonetheless seep in, either at the conscious or unconscious level. Reading, of course, is permissible. In fact, thinking about labor is not prohibited because the Torah was given to man and not to perfect angels.<sup>162</sup> Psychological research today is beginning to confirm the Torah's wisdom by providing support for the idea that these circumstances are precisely those necessary to optimize human creativity.

For those actively engaged in creative enterprise, much of what transpires on Shabbat can be considered nonconscious processing. The text of the Torah, in fact, explicitly relates instructions that seem to emphasize the passive role of unconscious processing as it relates to the need for rest and rejuvenation. The Torah instructs man to take a break from work for many reasons as discussed in Part II, but one of these reasons can simply be understood as promoting human physical and spiritual well-being.<sup>163</sup>

Current research on the proactive role of unconscious processing in enhancing creativity now is also beginning to confirm the theological insights of the Talmud. Recall Rabbi Shimon ben Lakish's observation, made nearly 2000 years ago, about the additional soul emerging on Shabbat as physical labor ceases.<sup>164</sup> The Jewish tradition links the concept of this soul to human creativity, the means through which humans express themselves artistically and otherwise. This remarkable concept comports with modern scientific findings on the active role of the unconscious as demonstrated by the "convergence-versus-divergence principle" which suggests that unconscious thought is more divergent and capable of promoting greater creativ-

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160. Some research also shows that napping can enhance creativity. See SARA C. MEDNICK & MARK EHRMAN, TAKE A NAP! CHANGE YOUR LIFE 26 (2006) ("Napping allows your brain to create the loose associations necessary for creative insight and opens the way for a fresh burst of new ideas.").

161. Abraham Cohen notes that love for the Torah led the sages to safeguard its commands by erecting fences around the law. ABRAHAM COHEN, EVERYMAN'S TALMUD: THE MAJOR TEACHINGS OF THE RABBINIC SAGES 150 (1995). One such fence is found in the Talmud's discussion concerning "adding from the non-holy to the holy" in connection with length of sacred days such as Shabbat and Yom Kippur. BABYLONIAN TALMUD *Rosh Hashanah* 9a. Thus, the Shabbat is inaugurated by lighting candles prior to sundown and it ends around an hour after sundown.

162. The well-known Shabbat song *Mah Yedidus* specifically says thinking about weekday matters are permissible. See THE FAMILY ZEMIROTS 47 (ArtScroll 1981).

163. See *supra* notes 46–50 and accompanying text.

164. See *supra* note 78 and accompanying text.



ity.<sup>165</sup> In addition, research shows that another way unconscious thought enhances human potential for creativity is by facilitating an individual's capacity for idea selection.<sup>166</sup> As a result of these findings, researchers now are recommending increased opportunities for people to nonconsciously process problems and incubate solutions.<sup>167</sup> It appears as though when it comes to human creativity, patience and percolation time is imperative.

The research also demonstrates a link between mind wandering and greater creativity deriving from the incubation process. It is difficult to resist commenting on this aspect of the research. Anyone who regularly attends worship services, particularly traditional Jewish ones that customarily last for three hours on Shabbat morning, will confirm that mind wandering is inevitable. This is true not only of the times when one is engaged in prayer, but also during the Torah reading which is a part of every traditional Shabbat morning service. As said earlier, the Torah was given to humans and not angels! Thus, the traditional Shabbat mode of celebration, including prayer and worship, is tailored-made to facilitate some degree of mind wandering. Scientists are now telling us that this too can enhance our capacity for creativity.

Finally, the duration of Shabbat may well provide the optimal period of nonconscious processing that will facilitate the resumption of highly creative enterprise after the day's end. Recall that research shows that an inverted-U shaped relationship exists between the duration of unconscious thought and creativity performance.<sup>168</sup> In addition, there appears to be evidence that unconscious thought should be preceded and followed by a period of conscious thought in order to maximize creativity. This cyclical dimension of creativity, rest and resumed creativity, actually is embodied in the narratives of the Torah in connection with the creation of the world and the building of the Tabernacle.<sup>169</sup>

Although modernity often creates difficulties and newfound challenges with respect to the observance of the Jewish tradition, including the laws of Shabbat, this Article demonstrates that modern science also has the potential for validating the wisdom of the tradition. Psychological research seems to be supporting the idea that the observance of Shabbat—a mandated weekly rest for one full day—may well enhance human creativity by facilitating nonconscious processing at both passive and proactive levels. The Jewish tradition has embraced the spiritual, physical and emotional benefits of Shabbat for thousands of years. As this paper suggests, modern science seems to be catching up to religion.

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165. *See supra* notes 122–23 and accompanying text.

166. *See supra* notes 130–34 and accompanying text.

167. *See supra* note 139 and accompanying text.

168. *See supra* notes 153–55 and accompanying text.

169. *See supra* notes 49–50 and accompanying text.