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Eved Hamelech: An Essay on Tzitzis and Techeiles

New expanded edition

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Part One: The Halachic Framework of the Mitzvah of Tzitzis

A. What Generates the Chiyuv: Chovas Gavra

The well-known machlokes concerning tzitzis is whether it is a chovas gavra, an obligation on the person, or a chovas tallis, an obligation on the garment:

“Rabbah bar Huna visited the home of Rava bar Rav Nachman. He saw him wearing a folded tallis, with its strings attached at the fold.... He said, ‘That is not the corner that the Torah speaks of.’ He removed it and put on another garment. He said to him, ‘Do you think it is a chovas gavra? It is a chovas tallis [even if you have ten garments, they require tzitzis]; go and attach them.... Rav Tovi bar Kisna said in Shmuel’s name: Garments kept in a chest [garments suitable for tzitzis, even when folded and stored away] require tzitzis” (41a).

In other words, if tzitzis is a chovas tallis, a person must attach tzitzis to every qualifying garment he owns, even when he is not wearing it. If it is a chovas gavra, as the halachah holds, he need attach them only to the garment he wears. One might think that chovas gavra means he must wear a garment suitable for tzitzis. The Gemara raises that possibility and rejects it:

“...Rather, what do you say: It is a chovas gavra? Granted, the Torah obligated him when he wears a garment subject to the obligation. But when he wears a garment that is not subject to it, did the Torah obligate him [to seek out a qualifying garment and wear it]?...” (41a).

Thus, according to chovas gavra, the obligation rests on the person and stored garments are exempt; yet someone who does not wear a qualifying garment is also exempt. We must add that someone wearing several qualifying garments needs tzitzis on each one (Tur, Orach Chaim 8; Beis Yosef and Shulchan Aruch, se’if 12). The chiyuv arises only when person and garment come together, and each garment has its own specific chiyuv. What is the relationship between the gavra and the tallis, and how do they combine to generate that obligation?

At the outset, one of the two elements—the person or the garment—must be the basic source of the chiyuv, while the other is an additional condition. There are therefore two possible ways to understand chovas gavra: Either the gavra is the basic source, meaning that the person has a standing obligation in principle, with an additional condition, that he be wearing a four-cornered garment; or the garment is the basic source, with the condition that it be worn.

The second possibility—that the garment generates the chiyuv, provided someone wears it—can itself be understood in two ways. More precisely, the requirement of wearing can have either of two definitions.

Perhaps the garment’s obligation exists in principle even when it is not worn, and wearing it is the condition that places the chiyuv on the gavra. The garment generates an obligation, but not simply on its owner, as the view obligating stored garments would hold; rather, on the owner who wears it. Even according to chovas tallis, surely we do not say that every passerby must attach tzitzis to someone’s garment, or that every Jew neglects an aseih whenever any garment lacks tzitzis. Even when the cheftza generates the chiyuv, responsibility for fulfilling that obligation rests specifically on its owner. We can therefore suggest that, according to chovas gavra, the relationship that places the garment’s obligation on the person is more than monetary ownership: It

is the closer relationship of wearing. The garment itself stands in need of tzitzis, but the person responsible for fulfilling its mitzvah is the one wearing it.¹

Alternatively, we can understand the wearing requirement as Rav Yosef Dov Soloveitchik z"l does (Shiurim LeZeicher Abba Mari z"l, volume 1, pp. 205-207). The garment is the basic source of the chiyuv, but wearing completes its shem beged, its status as a garment, and that status generates the obligation. The source is the tallis, as in chovas tallis, but specifically a tallis being worn, rather than one stored in a chest. Formally—for tumah, for example—a garment remains a garment even in a chest. Tzitzis, however, depends on its status as a garment being worn.²

If the garment is the basic source of the obligation—whether wearing places its chiyuv on the gavra or completes the cheftza's status as a tallis—it is understandable that each garment creates a separate chiyuv. Tzitzis on one garment cannot fulfill another garment's obligation. A further *nafka minah* between chovas gavra and chovas tallis emerges from the Gemara:

"[The opinion that it is chovas tallis] disagrees with the angel [who says it is chovas gavra]. An angel found Rav Katina wearing a linen garment [to which tzitzis with techeiles are not attached]. He said: 'Katina, Katina! A linen garment in summer and a rounded cloak [with only two lower corners, exempt from tzitzis] in winter—what will become of tzitzis [with techeiles]?' He answered: 'Do you punish for an aseh?' The angel said: 'At a time of anger, we punish.' If it is chovas gavra, we can understand why he is liable for not attaching [tzitzis]. But if it is chovas tallis, [someone whose garment is exempt] is not obligated! Rather, what do you say: It is chovas gavra? Granted, the Torah obligated him when he wears a qualifying garment; did it obligate him when he wears one that does not qualify [to seek out a qualifying garment and wear it]? [Rather,] this is what the angel meant: 'You seek devices to exempt yourself from tzitzis'" (41a).

The Gemara proves that the angel holds chovas gavra from his statement that, at an *idna de'rischah*, a time of Divine anger, punishment applies to someone who does not wear a garment obligated in tzitzis. The Gemara asks that even according to chovas gavra, the chiyuv applies only when one wears a four-cornered garment. It answers: "This is what he meant: You seek devices to exempt yourself from tzitzis." The original *girsah* does not include the word *ella*, "rather" (Tosafos, s.v. Hachi; Shitah Mekubetzes, note 9; and the manuscripts available to the author of *Dikdukei Soferim*). Apparently, the Gemara is confirming, rather than withdrawing, its proof that the angel holds chovas gavra. But after explaining that the issue is punishment at a time of anger for avoiding a chiyuv, rather than an actual obligation, how does that prove chovas gavra? Why would such punishment apply only to that view?

Apparently for this reason, Rashi changed the *girsah*, adding *ella* before the Gemara's answer. On that reading, the Gemara does withdraw its proof. Other Rishonim, however, worked to explain the original text. The Shitah Mekubetzes, citing Tosafos Chadashim and also presenting the explanation anonymously, says the *girsah* should remain. The proof that the angel holds chovas gavra is that otherwise he should have assumed Rav Katina had a

¹ Wearing alone, without ownership, certainly does not suffice to place the chiyuv on the gavra, since a borrowed tallis is exempt (44a). We must therefore require wearing by the owner. If a borrowed tallis becomes obligated *min haTorah* after thirty days, as the Shitah Mekubetzes holds (44a, note 3), unlike Tosafos there, s.v. Tallis, we can say that the chiyuv depends on wearing with an established, continuing connection. That connection can arise either through ownership or through borrowing for thirty days.

² There is a difficulty with the Rav's approach. If the obligation is chovas tallis, and wearing is needed only to complete the garment's status, then when another person wears someone's garment, its owner should immediately be obligated to attach tzitzis. This does seem to follow from the Rav's discussion of a borrowed tallis (*ibid.*, p. 215). It also seems to follow from the commentary attributed to the Raavad on Tamid (32a, on the Gemara at 27b): "The exemption of a borrowed tallis leaves an obligation with the owner." However, the Gemara at 44a discusses exempting the borrower, apparently taking it for granted that the owner is not obligated either.

garment with tzitzis at home, rather than rebuking him. But this explanation is forced. The Gemara's original proof was clearly more direct, and once that proof fell away, it should have stated the new basis explicitly.

Tosafos likewise omit *ella* and read only "This is what he meant..." understanding that the Gemara confirms its proof that the angel holds *chovas gavra*. In their view, punishment for lacking a four-cornered garment makes sense only under *chovas gavra*, not *chovas tallis*. The Gemara's straightforward meaning is therefore that, under *chovas tallis*, there is no more reason to seek a qualifying garment than to seek any other mitzvah that one is not obligated in. Under *chovas gavra*, there is such a requirement—not a full obligation, as initially supposed, but enough for punishment at a time of anger.

The question is: If even *chovas gavra* ultimately treats the worn garment as the source of the *chiyuv*, why should the two views differ about seeking it out? It is also difficult to assume that someone is punished for failing to bring upon himself an obligation that did not exist. Would someone be punished for not eating in order to bentch, or for not buying chametz in order to destroy it?³⁴

It therefore seems that, on the Gemara's straightforward reading, *chovas gavra* and *chovas tallis* differ about the very source of the mitzvah's obligation. *Chovas gavra* means that even without a garment, the basic source of obligation is present; what is missing is only a condition for the *chiyuv* to take effect in practice. The

³ The comparison to chametz applies only if the duty of eliminating chametz is a *chovas gavra* rather than an obligation of the *cheftza*. See Chiddushei Rav Chaim on the Rambam, Hilchos Chametz U'Matzah 1:3.

⁴ The Rav explains the Gemara according to Tosafos by proposing two *dinim* under *chovas gavra*: Beyond the *kiyum cheftza* of attaching tzitzis to the tallis, there is a *kiyum gavra* in wrapping oneself in it. Under *chovas tallis*, the latter does not exist. He understands the Gemara as referring to a general duty to seek mitzvos, which applies only to mitzvos containing a *kiyum gavra*; failure in that duty can bring punishment at a time of anger.

This explanation of Tosafos's *girsas* is difficult. It creates two independent disputes between *chovas gavra* and *chovas tallis*. First, what generates the *chiyuv*: Under *chovas tallis*, any tallis does so, even in storage; under *chovas gavra*, only one currently being worn does. Second, whether there is a *kiyum gavra*: Under *chovas tallis*, only the *kiyum cheftza* of furnishing the garment with tzitzis is required; under *chovas gavra*, there is also a personal act of being wrapped in tzitzis. Since the two disputes have no necessary logical connection, we should not multiply *machlokos* unnecessarily.

The Rav's description of this additional *chovas gavra* is unclear. Does it too arise from the worn garment as the obligating *cheftza*, so that the two *dinim* differ only in the content of the mitzvah, not its source? Or is the personal obligation wholly independent: A standing *chovas gavra* conditional on the external presence of the *cheftza*? Under the first possibility, one source—the *cheftza* of a worn garment—generates two duties: A *kiyum cheftza* in attaching tzitzis to that garment, and a *kiyum gavra* in wrapping oneself in it. Under the second, there are two independent sources, though the personal obligation is conditional on the garment's presence.

The Rav explicitly states (pp. 205-206) that someone not wearing a four-cornered garment is exempt because the source is *chovas tallis*: "Tzitzis... differs from the mitzvah of esrog... As long as a person is not wearing a four-cornered garment, he is not obligated in tzitzis and need not pursue it.... The garment generates the obligation, since the personal *chiyuv* depends on another circumstance: His wrapping himself in a four-cornered garment, which is the source of the mitzvah...." This implies that if the *gavra* were the source, even someone not wearing such a garment would have to seek one and attach tzitzis. If the Rav later meant to introduce an independent *chovas gavra* that could depend on a garment without treating that garment as its source, he should have explicitly withdrawn his earlier statement. All this suggests that he understood both obligations as arising from the single source of the worn garment.

Against this stand his remarks (pp. 205, 207) explaining Tosafos in Kesubos 40a, s.v. Kegon. Tosafos say that the wearer's ability to replace his linen garment with wool and fulfill tzitzis with *techeiles* without *kilayim* does not count as "fulfilling both." The Rav says this is understandable only regarding the *kiyum cheftza*; if the *kiyum gavra* stood alone, it would count as fulfilling both. But if both duties arise from the worn garment, the personal duty is clearly to be wrapped in the tzitzis of that particular garment. Even for a personal mitzvah like taking a lulav, if the *din* were that every arrival of the four *minim* created a new obligation, the obligation would plainly be to take those particular *minim* that triggered it. These remarks therefore suggest that the *chovas gavra* is independent and does not arise from the *cheftza*. The Rav's statements thus appear to contradict one another. See also pp. 212-213 concerning a night garment worn during the day.

condition is that the person wear a four-cornered garment. This defines an exemption: Without such a garment on him, he is patur. Under chovas tallis, the garment is the source; without it, there is no basis for an obligation at all. Under chovas gavra, someone without a garment is exempt from fulfilling his obligation even though its basic source remains present.

We can therefore say that when the basic source exists but the gavra is exempt because an external condition is lacking, he should, lechatchilah, seek to satisfy that condition so he can actually fulfill his duty, though technically he is presently exempt. If he fails to obtain a four-cornered garment, that technical exemption does not prevent punishment at a time of anger. When the basic source itself is absent, however, there is no duty to pursue it. Thus, under chovas tallis, someone lacking a four-cornered garment is not punished for that, even at an idna de'rischah.

The Gemara's wording is precise: "The Torah obligated him when he wears a qualifying garment.... You seek devices to exempt yourself from tzitzis."

The Rambam likewise writes: "How does the obligation of tzitzis apply? Every person obligated to perform this mitzvah, if he covers himself with a garment suitable for tzitzis.... Although a person is not obligated to buy a tallis and wrap himself in it in order to make tzitzis on it, it is not proper for a pious person to exempt himself from this mitzvah..." (3:10-11).

Tosafos write similarly: "The Rashba understands that bikkurim are not considered a mitzvah dependent on the land. They differ from terumah, maaser, and challah, where the produce itself requires terumah because it is tevel.... With bikkurim, the chiyuv depends on the person rather than the produce, which is not prohibited to eat.... Although someone who has none need not buy any, it is nevertheless a personal obligation, like tzitzis: Even though someone without a tallis need not buy one, it is considered a personal obligation" (Bava Basra 81a, s.v. Hahu LeMa'utei Chutz LaAretz).

We must still explain why someone wearing several garments needs tzitzis on each. If the garment is merely an external condition for the chiyuv, then once he has one or more garments and that condition is met, he should seemingly need tzitzis on just one. Why is each obligated?

It therefore seems that the garment is more than an external condition. Although it is not the basic source of the mitzvah's chiyuv, the content of that chiyuv concerns the cheftza: The mitzvah is fulfilled by furnishing the tallis with tzitzis, rather than by the gavra being wrapped in tzitzis. The gavra generates the obligation, but the duty concerns the cheftza. Tzitzis is not a mitzvah for the garment's own sake, yet the mitzvah is defined as creating and changing a condition in the garment. The person must have his tallis furnished with tzitzis. The garment to which that duty applies can therefore be every garment he wears, including several at once.⁵

Accordingly, the condition discussed above—that he must be wearing a tallis—is not truly external; it is rooted in the content of the duty. The obligation is to create a kiyum cheftza in the garment by furnishing it with tzitzis. Without a garment, there is no cheftza in which the obligation can be fulfilled. When a duty cannot be carried out and fulfilled, it has no operative definition. The Torah defined the duty so that the cheftza is the focus of the required act; without it, the duty has no content or meaning. The gavra's duty is to furnish every garment he wears with tzitzis: If there are several, all of them; if one, that one; if none, none. Thus, although the garment is not the basic source of the mitzvah, it is necessary for the chiyuv to take effect. The obligation exists in theory at all times, but receives practical content only through wearing a garment.

⁵ Our proposal is the reverse of the Rav's. In his view, even the chovas gavra—one of the two dinim he identifies under the opinion that tzitzis is chovas gavra—is personal only in its content and fulfillment; its basic source remains the garment. In our approach, the basic source is the chovas gavra, while the content and fulfillment concern the cheftza.

This principle—that someone without a tallis is exempt because he cannot fulfill the mitzvah in a tallis—may be hinted at by the Rambam’s wording: “How does the obligation of tzitzis apply? Every person obligated to perform this mitzvah, if he covers himself with a garment suitable for tzitzis...” In defining the garment as a condition, the Rambam does not say “a garment obligated in tzitzis,” but “a garment suitable for tzitzis.”

Under chovas tallis, the garment itself generates the chiyuv: It needs tzitzis. A person must therefore rectify every garment in his responsibility—every garment he owns—so stored garments are obligated too. Under chovas gavra, however, the garments do not themselves require rectification; the person is obligated to furnish his tallis with tzitzis. The duty is therefore defined only for garments with which he has a particular relationship: Every garment he wears.⁶

⁶ In Shiurim LeZecher Abba Mari z”l, the Rav brings further proofs for his approach. However, these prove only that there is a kiyum cheftza, not that the cheftza generates the mitzvah’s obligation. They therefore apply to our approach as well. His additional proofs are as follows.

The Rambam rules (1:15) that when one attaches a second set of tzitzis intending to replace the original set, rather than add to it, the new tzitzis are not yet valid before the first set is cut: “He unties or cuts the first set, and it is valid.” Thus, there has not yet been a valid act of mitzvah. Nevertheless, Shmuel says in the Gemara that there is no kilayim prohibition. The Rav infers (pp. 201-202, 216-219) that although a kiyum gavra cannot presently be achieved, there is a kiyum cheftza, which permits kilayim.

The proof is not conclusive. Shmuel may be speaking after the original strings were cut; his chiddush is then that a mitzvah exists despite the garment having been exempt at the time of attachment. In other words, an act can render tzitzis valid even when that act is not presently obligatory. [This also appears to be Rav Pappa’s meaning: “There is an act” means an act that validates, rather than an act that disqualifies, as Rashi explains. In my view, this is how to explain the Gemara according to the Rambam, unlike the Kesef Mishneh.]

Tosafos say (Kesubos 40a, s.v. Kegon) that the possibility of replacing a linen garment with a woolen one does not count as “fulfilling both.” The Rav (pp. 205, 207) says this makes sense only for a kiyum cheftza. As noted above, that is not a proof within his approach: The fact can be explained by the cheftza generating the chiyuv, even if the fulfillment is personal and depends on that cheftza. Precisely in our approach, where the garment does not generate the chiyuv, this does prove a kiyum cheftza.

Tosafos hold (40a, s.v. Keivan, first answer; Kesubos 40a, s.v. Kegon, in Rabbeinu Tam’s name) that a special gezeiras hakasuv wholly permits kilayim for complete tzitzis with techeiles, even where both requirements could be fulfilled. Thus, not only may white wool be attached to linen, but white linen may be attached to wool together with techeiles. With lavan alone, however, kilayim is only overridden by the general principle that an aseh overrides a lo saaseh, and only when both cannot be fulfilled. Without techeiles, neither linen in wool nor wool in linen may be used. The Rav argues (pp. 203-204, 215-216) that even the special permission must have a permitting factor, which must be the kiyum cheftza of the garment with tzitzis.

But even if tzitzis were entirely chovas gavra, with no kiyum cheftza, we could still identify the permitting factor as the halachic status of the object used for that personal fulfillment, as with the four minim used for netilas lulav.

Rabbeinu Tam’s view regarding a daytime garment worn at night, cited in Tosafos 40b, s.v. Techeiles, and Rosh, siman 1, is that it still requires tzitzis, but kilayim is permitted only because “the Torah wholly permitted kilayim in tzitzis,” not through the ordinary principle of aseh docheh lo saaseh. His view clearly has one layer of the mitzvah existing only by day, which overrides kilayim, and a second layer existing in a daytime garment even at night, which cannot override kilayim. At night, the permission therefore rests only on the special gezeiras hakasuv.

The Rav identifies the first layer as the gavra’s act of being wrapped in tzitzis and the second as the kiyum cheftza of furnishing the garment with tzitzis. The personal act overrides kilayim and exists only by day. The kiyum cheftza remains in a daytime garment at night; it does not override a prohibition operating on the person’s act, but it permits kilayim in the cheftza through the special pasuk.

This proof comes specifically from Rabbeinu Tam’s view as cited in Tosafos. If we hold that a daytime garment is exempt at night—whether kilayim remains prohibited, as the Rambam holds (3:7), or is permitted through a special pasuk even during complete exemption—or that it remains obligated at night and therefore permits kilayim, there is no proof here of a kiyum cheftza. Rabbeinu Tam’s view proves not only a kiyum cheftza but an additional kiyum gavra. The Rambam’s view gives no proof of two fulfillments. In our approach, all agree that the obligation is chovas gavra; they dispute only the fulfillments. Rabbeinu Tam has two parallel kiyumim, while the Rambam, as explained below, does not.

The Rema’s view (Darkei Moshe 8:5) is that on a tallis katan one says “al mitzvas” because, although there is a mitzvah fulfillment, it is not performed in the proper manner. Thus, he recognizes two levels of fulfillment. The Rav identifies these as the

We have proposed that the gavra generates the obligation of tzitzis, while its content is a kiyum cheftza in furnishing the tallis with tzitzis. The person has a standing obligation to furnish every garment he wears. This gap between the source, the gavra, and the required content, the kiyum cheftza, needs explanation. Why would the Torah impose a constant obligation, even theoretically, when the mitzvah's value exists only in a particular, limited situation?

It therefore seems that the person's act must itself contain a mitzvah fulfillment. This is not the straightforward kiyum gavra of simply being wrapped in tzitzis; if it were, he would actually have to obtain a qualifying garment. Rather, there is a kiyum gavra in furnishing the garment with tzitzis. Providing the garment's kiyum cheftza itself creates a personal fulfillment. What personal fulfillment arises from doing so? What is the value of the gavra's act of furnishing his tallis?

"A beraisa teaches: Rabbi Meir used to say that the punishment for neglecting lavan is greater than for neglecting techeiles. To what is this comparable? To a mortal king who told two servants: 'Bring me a clay seal,' to one, and 'Bring me a gold seal,' to the other. Both neglected his command and brought nothing. Which deserves the greater punishment?

The one told to bring a clay seal [which is readily available], who did not bring it" (43b).

Shabbos 58b shows that a "seal" is a kavla de'avda, a badge hanging from a servant's or animal's neck or clothing, identifying its master's ownership. Rashi likewise explains here: "A seal—they made one for an animal or servant when acquiring it, as a sign of servitude." Rabbi Meir therefore seems to be teaching more than the relative severity of lavan and techeiles; he is also explaining the character of tzitzis. Tosafos write: "He compares a clay seal to tzitzis because such seals are made for servants, and tzitzis testify that Yisrael are servants of HaKadosh Baruch Hu..." (s.v. Chosam Shel Tit).

Tzitzis is a sign that the person serves his Master, HaKadosh Baruch Hu. A servant's seal signifies acceptance of servitude through the very act of complying with the master's instruction to keep the seal on his clothing. Shabbos discusses badges whose presence the master insists upon and those about which he is less particular; even the latter presumably originate with the master. Seeing the seal on the servant's neck or clothing, one understands that keeping it there expresses the authority of the master who commanded it.

kiyum cheftza and the kiyum gavra, the latter existing only with a tallis gadol. [Views exempting a tallis katan, requiring "lehisa'tef" on it, as the Mechaber and Gra do, or requiring "al mitzvas" because the act differs rather than because the fulfillment is deficient, provide no proof from the berachah.]

However, the Rema explicitly explains otherwise: "Al mitzvas" is used because of concern for views wholly exempting a tallis katan. Apparently, he does not regard this as a genuine doubt sufficient to omit a berachah, but as a limited concern warranting a change in its wording.

The Rav explains that the two kiyumim derive from the two parshiyos of tzitzis. Ki Seitzei (Devarim 22:12), "You shall make twisted cords on the four corners of your garment..." gives an obligation of the cheftza. Shelach (Bamidbar 15:38-39), "...They shall make tzitzis on the corners of their garments throughout their generations, and place on the corner's tzitzis a thread of techeiles; it shall be tzitzis for you, and you shall see it and remember all Hashem's mitzvos..." gives a kiyum gavra.

On closer inspection, however, Shelach formulates the duty exactly as Ki Seitzei does: To furnish the garment with tzitzis. The difference is only that Shelach describes the resulting seeing and remembering, which concerns the gavra. The Rav apparently understood that, because Shelach aims at a personal fulfillment, the formal content of the duty must likewise be being wrapped in tzitzis; furnishing the garments is merely the technical means, accomplished beforehand.

It seems, however, that seeing and remembering are the intended consequence of the mitzvah, not part of its primary required content. Only the Semak, mitzvah 28, counts seeing the tzitzis as a mitzvah; the Rashbatz likewise does so in Zohar HaRakia, mitzvah 20, but the other poskim mention no such independent duty. This does not prevent that consequence from defining particular dinim within the formal obligation. Thus, "you shall see it" teaches that nighttime is not the time for tzitzis: A time when the mitzvah does not lead to the personal result of seeing and remembering is excluded from the basic chiyuv as well.

Likewise, seeing tzitzis on a person's garment, one recognizes that Hashem's command has been fulfilled by furnishing the tallis with tzitzis. They thus become a sign of the person's service to Hashem. The Torah commanded that the garment carry a badge of servitude, identifying the wearer, who placed it there, as Hashem's servant.

The basic fulfillment is therefore personal: The person expresses his service to Hashem. That fulfillment has constant value and meaning, so there is a standing *chovas gavra* in principle. Yet the commanded way to express it is by furnishing every suitable garment he wears with tzitzis. The duty is consequently limited to situations in which this *kiyum cheftza* can be created, and applies separately to every garment capable of receiving it. Furnishing one's garment, or garments, with tzitzis creates a *kiyum gavra* of accepting the Master's authority.

B. The Act of the Mitzvah

Until now, in discussing furnishing the tallis as the required act, we have grouped together attaching the strings and the resulting state of having tzitzis on the garment. We shall now examine each separately and their relationship.

If the mitzvah's content were a *kiyum gavra* of being wrapped in tzitzis, attaching the strings would clearly fall outside the required content. It would merely prepare the cheftza used later for the mitzvah—making *tashmishei mitzvah*—like building a sukkah, binding a lulav according to the view requiring binding, or writing *sifrei Torah*, *tefillin*, and *mezuzos*.

We have instead said that the required personal act directly produces a *kiyum cheftza* in the tallis, thereby defining a personal fulfillment through furnishing one's garments. We can now ask: Is the mitzvah's act simply ensuring that the garment has tzitzis, with no particular physical action required? Or does attaching the tzitzis itself belong to the obligatory act, just as the resulting state constitutes the required *kiyum cheftza* that defines a *kiyum gavra*?

Are "They shall make tzitzis... and place a thread of *techeiles* on the corner's tzitzis..." and "You shall make twisted cords..." merely technical descriptions of how to achieve the required result? Or is attachment itself halachically commanded? If only the resulting state is required, attachment is a preparation for the mitzvah: Creating a cheftza for later fulfillment. If the required act includes attachment, then attachment has the status of a *maaseh mitzvah*.

We will examine attachment mainly through the Rambam's view, using the requirements of spinning and making *lishmah*. The Gemara challenges Beis Hillel, who do not require a sukkah to be made *lishmah*:

"Do Beis Hillel not accept Rav Yehudah's statement in Rav's name? Rav Yehudah said in Rav's name: If one made it from *kotzin*, *nimin*, or *gardin*, it is invalid; from *sisin*, it is valid. When I said this before Shmuel, he told me: Even from *sisin* it is invalid. [Evidently] we require spinning *lishmah*; here too, should we not require a sukkah made *lishmah*?" (Sukkah 9a; Rav and Shmuel's dispute also appears in Menachos 42b).

Rashi, in Sukkah and Menachos, understands *kotzin*, *nimin*, and *gardin* as various thread ends protruding from a garment. Leaving them there to serve as tzitzis is invalid because making *lishmah* is required. *Sisin* are balls of thread spun without *lishmah*. Rav does not require spinning *lishmah*; Shmuel does. To challenge Beis Hillel, the Gemara needs only the requirement of making *lishmah*, which Rav also accepts. The question therefore comes from both Rav and Shmuel. Rashi accordingly deletes *alma*, "evidently," which would imply that the challenge rests specifically on Shmuel's reason, "we require spinning *lishmah*." Tosafos (42b, s.v. *HaKotzim*) broadly agree

with Rashi's explanation, but retain the original girsa and are forced to say the Gemara was imprecise: "It asks from Shmuel, not Rav, though it could also have asked from Rav."

The Baal HaMaor (Sukkah 4b in the Rif) cites a different explanation from a Geonic responsum: "Kotzin: When sheep rest against thorns and brambles, the wool pulled loose there is kotzin. Nimin: Among the soft wool are hard strands of hair. Gardin: What a weaver leaves over and cuts away. Tzitzis made from these are invalid." Clearly, the Geonim do not attribute the invalidity to making without lishmah: These materials are not yet attached to a garment, and could still be made into tzitzis lishmah.

The Baal HaMaor explains that they are wool waste from which garments are not made, while tzitzis share a garment's requirements through "hakanaf—min kanaf," material of the same kind as the corner. The Raavad, in his gloss there as preserved in Kasuv Sham, explains: "Kotzin and nimin, because they are not choice material; gardin, because they were already in a garment, while the Torah says, 'They shall make tzitzis on the corners of their garments.'"

The Geonic explanation fits the original text in Sukkah well: Rav says nothing about lishmah; only Shmuel introduces spinning lishmah. The Geonim rule like Shmuel, despite the usual rule of following Rav in matters of prohibition, because the Gemara bases its challenge on Shmuel.

The Rambam understands these three materials like the Geonim rather than Rashi, and rules (1:11) that spinning lishmah is required. Nevertheless, he omits Shmuel's specific case, invalidating tzitzis made from sisin. It therefore seems he rules like Rav and reads spinning lishmah into Rav's view as well. Kotzin, nimin, and gardin are invalid precisely because spinning lishmah is required. Their din in the Rambam should be read as a direct continuation and application of his opening: "The threads of tzitzis, both lavan and techeiles, require spinning for tzitzis, and they are not made from wool caught on thorns...."

Wool drawn out by thorns already becomes something like a thread; strands already present as threads in the sheep's fleece likewise have a shem chut, the status of thread, and can no longer be spun lishmah. Gardin obviously were not spun lishmah. The Rambam therefore concludes: "Rather, from shorn wool or flax," meaning that tzitzis threads must begin with material not yet spun, so that its spinning can be lishmah. Sisin, for the Rambam, are apparently wool balls at an intermediate stage between raw wool and threads, or balls of very fine fibers that can still be spun. Rav permits them because they can still be spun lishmah; Shmuel regards them as already spun and invalidates them.

On this explanation, "Evidently we require spinning lishmah" refers to all of Rav Yehudah's statement, both Rav and Shmuel. There is no need to delete text or say the Gemara departs from the usual rule of following Rav in issurim. Since its challenge is not based specifically on Shmuel, the Rambam follows Rav and omits the invalidity of sisin. Unlike the Geonic explanation, ours makes especially clear why the sisin dispute appears alongside Rav's ruling on kotzin, nimin, and gardin.

Thus, according to Rashi and the Geonim, spinning lishmah is disputed by Rav and Shmuel. The Geonim follow Shmuel because the Gemara in Sukkah builds a challenge on his view. According to Rashi, presumably Rav should be followed and spinning lishmah is unnecessary. According to the Rambam, all agree it is required.

For Rashi, Rav explicitly requires making lishmah, and nothing indicates that Shmuel disagrees; moreover, Rashi would apparently rule like Rav. Under the Geonic explanation, as understood by both Baal HaMaor and Raavad, and under our explanation of the Rambam, making lishmah is not discussed in this sugya at all. We cannot infer whether it is required.

The Rishonim who reject Rashi's explanation dispute making lishmah. The Raavad takes it as an obvious requirement accepted by all, although it is not discussed in Rav's statement. Rav and Shmuel dispute whether

the earlier preparatory stage of spinning also requires lishmah. The Ramban, in Milchamos, instead understands Rav as not requiring making lishmah. His proof is Rav Yehudah's own statement in Rav's name: One version (42b) validates tzitzis made by a non-Jew; another (42a) invalidates them only because of the special pasuk, "Speak to Bnei Yisrael, and they shall make tzitzis." A non-Jew acts for his own purposes and cannot fulfill lishmah (Gittin 23a).

For the Ramban, then, Rav requires neither spinning nor making lishmah, whereas Shmuel requires even spinning lishmah. The Rashba and Ritva in Sukkah agree. These Rishonim evidently assume that if spinning lishmah is required, making lishmah certainly is. Indeed, Gittin 45b states explicitly: "Does Rabban Shimon ben Gamliel require processing lishmah but not writing lishmah?" If an earlier stage, such as processing the tefillin's leather, requires lishmah, all the more so the later stage of writing should require it. Yet the Rambam's rulings for tzitzis do not fit that assumption. He requires spinning lishmah but does not require making lishmah. His wording (1:12) suggests that, like the Ramban, he derives the validity of making without lishmah from the theoretical validity of a non-Jew's work, absent the special pasuk: "Tzitzis made by a non-Jew are invalid, as it says, 'Speak to Bnei Yisrael, and they shall make tzitzis'; but if a Jew made them without intent, they are valid."

For the Ramban, this is only Rav's view, which does not require spinning lishmah; anyone requiring spinning lishmah would also require making lishmah. The Rambam, however, requires the former but not the latter. On our explanation, Rav himself holds both rulings.

It is unreasonable to say that making theoretically requires lishmah, and the Rambam merely means that explicit intent is unnecessary because unspecified intent is presumed lishmah. If that were his reason, he should explain it, since there is a *nafka minah* when someone expressly intends otherwise.⁷ The Rambam's interpretation of Rav, and his ruling, therefore need explanation in light of the *kal vachomer* in Gittin.⁸ We must

⁷ The Griz discusses presumed lishmah that is not invalidated even by intent *shelo lishmah*, because the *cheftza* already has the status of a *korban* (Hilchos Maaseh HaKorbanos 4:11). One might apply that here because spinning lishmah has already established the object as a *cheftza shel mitzvah*. But this seems applicable only to a *korban*, whose *kedushas haguf* creates an objective designation, not to the mere status of an object of mitzvah.

Rav Chaim, on Hilchos Tefillin 1:15, explains the Rambam's omission of writing lishmah through presumptive lishmah; there too the Rambam does not explain that explicit contrary intent invalidates. However, a distinction seems warranted. There the Rambam does not explicitly say writing lishmah is unnecessary; he simply does not mention the requirement. Presumptive intent is therefore plausible: The designation has already been established and remains until uprooted. Here, by explicitly saying intent lishmah is unnecessary, he ordinarily means no such requirement exists in principle, so even explicit contrary intent would not invalidate.

Another proof that validity here does not arise from presumed lishmah is that the Rambam apparently derives the absence of making lishmah from the theoretical validity of a non-Jew's making. Rav Chaim proves there that, for the Rambam, a non-Jew cannot even act lishmah through the presumed designation of established content. Tzitzis-making must therefore require no designation lishmah, even by presumption.

This proof could be rejected by saying lishmah in tefillin concerns the *gavra's* act, as the Rambam indeed states in a responsum, Blau 334. A non-Jew is therefore excluded from the *cheftza's* presumed designation affecting his act. In tzitzis, however, lishmah might concern the *cheftza*, which at this stage is already designated, even if the non-Jew's act is not lishmah. But I find such a fundamental distinction between lishmah in tefillin and tzitzis unconvincing.

⁸ The Rambam's rulings on processing and writing lishmah themselves appear inconsistent with Gittin. He follows the Chachamim that processing tefillin boxes need not be lishmah, yet requires processing the parchment of a *sefer Torah* and tefillin lishmah (1:14), like the *yesh mefarshim* in Tosafos 42b, s.v. *Ad SheYa'abden Lishman*, unlike Rabbeinu Tam, who equates boxes and parchment. Applying Gittin's *kal vachomer* would require writing *sifrei Torah* and tefillin lishmah too. Yet the Rambam invalidates writing without lishmah only for Divine Names (1:15; 10:1, item 11).

Rav Chaim explains that writing does require lishmah in principle, but a Jew's writing has presumed lishmah, unlike a non-Jew's, which is discussed in Gittin. One could logically distinguish lishmah in holy objects from lishmah in mitzvah objects, limiting Gittin's *kal vachomer* to holy objects. However, Menachos 42b treats spinning lishmah as disputed by Rabban Shimon ben

say that the Rambam distinguishes processing and writing a sefer Torah or tefillin from spinning and making tzitzis. Processing and writing belong to one category: Creating the cheftza that will later be used for the mitzvah. If the earlier stage requires lishmah, so does the later one. Spinning tzitzis threads certainly creates such a cheftza, like processing and writing tefillin; making the tzitzis, however, must belong to a different category. Only then would Gittin's kal vachomer not apply.

Yet attaching tzitzis to a garment seems precisely to create a cheftza for a mitzvah: It is a critical step in shaping the complete object. How can it fall outside that definition? We must say that it goes beyond preparing a cheftza: Making tzitzis is itself the maaseh mitzvah, so it does not receive the status of an act creating an object for a mitzvah. Lishmah is a din in creating such objects. Within that process, the Gemara says that the further one advances, the greater the need for lishmah, in principle and apart from presumed lishmah. An actual maaseh mitzvah falls outside that din of preparing mitzvah objects lishmah.⁹

Giving the making some other significant halachic status would not suffice to remove it from the category of creating a mitzvah object. It could retain that designation in addition to its other status, and Gittin's kal vachomer would still require lishmah. Only if tzitzis-making is itself a maaseh mitzvah can it fall outside the requirement of creating mitzvah objects lishmah. From the Rambam's requirement of spinning lishmah but not making lishmah, we learn that attachment is not merely preparation of the object for later fulfillment. It is an act required by the mitzvah itself.

Rabbeinu Chananel writes in Sukkah: "We answered: Tzitzis is different, for it says, 'You shall make twisted cords for yourself'—for the obligation. Therefore, we require the making, which is spinning, for the sake of the cords..." We can learn two things: Only spinning counts as "making" in this context, and therefore only spinning requires lishmah, not attachment to the garment. Rabbeinu Chananel thus also holds, like the Rambam, that attachment is a maaseh mitzvah rather than creation of the mitzvah object.

This maaseh mitzvah differs greatly from others. Usually, a person becomes obligated, performs the act, and thereby fulfills the mitzvah. With tzitzis, before he wears the tallis, the basic source of obligation is present, but the chiyuv is not yet defined for that particular garment, and therefore does not yet exist. The act is performed before the chiyuv takes effect. When he wears the tallis, its obligation takes effect, and its content is that he should previously have attached tzitzis. He performs an act that becomes obligatory only afterward. The Rambam indeed defines the mitzvah this way: "How does the obligation of tzitzis apply? Every person obligated to perform this mitzvah, if he covers himself with a garment suitable for tzitzis, shall attach tzitzis to it and afterward cover himself with it" (3:10).

Clearly, fulfillment is not exhausted by attachment. Having tzitzis on the garment while wearing it is also a fulfillment. There are therefore two components: Attaching tzitzis, and their presence when the garment is worn. The Gemara also proves this:

"Rav Yehudah... would recite 'lehisa'tef be'tzitzis' every morning... Why every morning? He follows Rebbi, for a beraisa teaches: 'Each time one puts on tefillin, one recites a berachah, says Rebbi.' If so, why not each time during the day as well? Rav Yehudah was modest and did not remove his garment all day" (43a).

Gamliel and the Chachamim; this shows that his processing requirement concerns mitzvah lishmah, since tzitzis has no kedushah. The relationship among the sugyos in Menachos, Sanhedrin 48b, and Gittin concerning that dispute is beyond our present scope.

⁹ Intent in the maaseh mitzvah may still be required under mitzvos tzerichos kavannah, but that is independent of spinning lishmah. For the Rambam, no such intent is required here—either because mitzvos generally do not require kavannah, or because this act has no present fulfillment, as explained below.

Each renewed wrapping requires a berachah, showing a mitzvah fulfillment in wrapping. Clearly, this is not because of the physical motion itself, but because it renews the state of being wrapped. Given our definition of the mitzvah as furnishing the tallis with tzitzis, he blesses on renewing the state in which the garment he wears has tzitzis. Attachment is therefore not the sole maaseh mitzvah; the continuing state of the garment's having tzitzis also counts.

The garment retains its tzitzis when he is not wearing it. Nevertheless, not wearing it interrupts the fulfillment, so wrapping again renews the mitzvah and requires another berachah. The kiyum cheftza depends on its defining a personal fulfillment—not merely wrapping, but having the tzitzis badge on one's garment—and on the gavra's chiyuv being defined toward it. When he is not wearing it, there is no meaningful personal fulfillment or obligation toward that garment, and therefore no mitzvah fulfillment in it. He fulfills his duty by furnishing the garment or garments he wears. A garment he is not wearing presently has neither a chiyuv nor a fulfillment for him.

The Gemara gives another nafka minah between chovas gavra and chovas tallis:

“Rav Nachman found Rav Adda bar Ahavah attaching threads [tzitzis to his tallis] and reciting ‘la’asos tzitzis.’ He said... ‘Rav said: Tzitzis does not require a berachah [when made].’... Rather, the reason is: Any mitzvah whose making completes the mitzvah requires a berachah; a mitzvah whose making does not complete it does not. Regarding tzitzis, this is their dispute: One holds chovas tallis [so making completes the mitzvah]; the other holds chovas gavra [so wrapping is its mitzvah]” (42a-b).

Under chovas tallis, the berachah is recited at attachment. Under chovas gavra, it is recited at wrapping, not making. Attachment lacks a berachah because “its making does not complete the mitzvah.” Why does an act that does not complete the mitzvah lack a berachah? Clearly, failure to complete indicates that the act is not a full fulfillment. Building a sukkah or making tefillin is no maaseh mitzvah at all; it creates objects for later fulfillment. With tzitzis, although making is a maaseh mitzvah, it is not a complete fulfillment. Under chovas tallis, rectifying the garment through attachment itself fulfills the mitzvah, so a birkas hamitzvos is recited. Under chovas gavra, attachment is directly commanded, not merely technically needed for later fulfillment. Nevertheless, while the garment is not worn, its state of having tzitzis gives no fulfillment; similarly, because no chiyuv is presently defined toward it, the act of making gives no present fulfillment and receives no berachah.

Thus, tzitzis-making is a required maaseh mitzvah without a present kiyum. When he furnishes his garment, he is not yet obligated regarding that garment. Only upon wearing it does its specific chiyuv arise: He then becomes obligated in having previously furnished it, and the earlier act retroactively becomes a mitzvah fulfillment. Since it was not a fulfillment when performed, no berachah was recited then.

We have learned that two things are required: Furnishing the tallis and its having tzitzis. So far, their status does not differ in principle, except that making precedes the garment's obligation, depriving it of present fulfillment and a berachah. We must still determine their underlying relationship.

Initially, one might reasonably suppose that the primary fulfillment is the worn garment's state of having tzitzis. Making, though formally commanded rather than merely technical preparation, would be required as creating that result. We must test this against the halachic evidence.

The Gemara states: “The sons of Rabbi Chiya said: Worn-down techeiles threads are valid.... What length must remain? Bar Hamduri said in Shmuel's name: Enough to tie them in a bow.... Rabbah bar Rav Adda said in Rav Adda's name, in Rav's name: If a thread is severed at its root, it is invalid. Rav Nachman was teaching this, and Rava challenged him: When is this said [that a prescribed tzitzis length is needed]? Initially [when made];

afterward [if it broke later], its remnants and worn-down portions may be any length.... This teaches that enough must remain to tie them in a bow" (38b-39a).

The din of gardumin establishes that the required length applies only when tzitzis are made. Perhaps the measurements are derabbanan and were relaxed bedieved, as the Nimukei Yosef seems to imply (Hilchos Ketanos 7b in the Rif, based on 35b). Yet even a rabbinic formal measurement defined in a cheftza normally remains indispensable.

The more usual explanation is that remnants retain the object's status: Shem tzitzis is defined by remnants of an original required size. An object that began at four fingerbreadths and diminished still has shem tzitzis; the requirement is that status—a cheftza of four-fingerbreadth tzitzis or their remnants. This may explain gardumin, but not another very similar din:

"Rabbi Yaakov said in Rabbi Yochanan's name: One must place them a thumb-joint's breadth from the edge.... Ravina and Rav Sama were sitting before Rav Ashi. Rav Sama saw that Ravina's garment corner had frayed and was less than a thumb-joint's breadth [the hole had widened and descended; alternatively, the garment below had frayed until the distance from edge to hole diminished]. He said: 'Does the master not accept Rabbi Yaakov's ruling?' He answered: 'It was stated for the time of making [and I too originally placed it that distance]'. Rav Sama was embarrassed" (42a).

Tzitzis must be attached a thumb-joint's breadth from the garment's edge only when made. The parallel with the initial length requirement is striking. Here, however, the measurement is not in the tzitzis object, whose remnants might preserve its status. Nor is it in the garment's overall size, allowing the garment to retain its original status despite diminished dimensions. It measures the relationship between tzitzis and garment: The form of the garment with tzitzis, not its size.

To explain this similarly, we would have to say that a cheftza retains its identity not only after losing original size requirements but after losing original structural requirements—that a changed form does not change its status. That is difficult logically. Remnants of thread length might preserve an original identity; fraying of the edge toward the hole is harder to explain that way. This rationale cannot explain the din that, according to Rebbi, if one kind, lavan or techeiles, wears away completely and the other remains, the tzitzis stay valid, although both are initially required:

"Rather, Rava said: It is needed only for remnants: If the techeiles wore away and lavan remains, or lavan wore away and techeiles remains, there is no problem" (38b).

How can tzitzis retain their original identity as containing two kinds when one kind has entirely disappeared?

This question assumes that remnants of the kinds constitute an independent din, rather than a detail of the length-remnants rule. That follows according to the Ri, in Tosafos 38b, s.v. Ella, and Rosh, siman 7.¹⁰ He recognizes two separate leniencies: All the strings may shorten, provided enough remains for a bow; and one kind may disappear entirely, even below bow-length, provided the other remains, even only at bow-length. Remnants of a kind are thus independent.

Rabbeinu Tam instead requires one kind to remain at full original length and the worn-down kind to retain bow-length. This could mean that retaining one kind is a condition within the length-remnants rule. Yet even for Rabbeinu Tam, bow-length in the worn-down kind may reflect a separate requirement of four threads, compare Tosafos 38a, s.v. HaTecheiles; that four-thread requirement needs bow-length. On that reading,

¹⁰ The yesh mefarshim in Tosafos and the Rosh is the Ri, as the Mordechai, siman 939, clarifies. However, the Mordechai's subsequent reconciliation does not seem to fit the Ri, either logically or from the Rosh and Tosafos.

remnants of kinds are independent even for him. Only if he has one combined gardumin rule—one kind complete and bow-length in the other—can we say the remaining combination preserves the original identity. In any event, the Ri's explanation of Rebbi in the Gemara is more plausible, and it is the basic halachic ruling.¹¹ We therefore need a different rationale that explains all the gardumin cases. Although the Ri applies remnants of kinds only to Rebbi, not the Chachamim, that is because he understands the Chachamim as treating them as two mitzvos, not because they reject the general character of gardumin.

It seems these requirements—four fingerbreadths of length, a thumb-joint's breadth from the edge, and, for Rebbi, two kinds—apply in principle only at making. They certainly describe the cheftza's size or form, but the halachic framework requiring those properties is attachment, rather than the continuing presence of tzitzis on the tallis. The din requiring tzitzis on a worn garment demands one level of cheftza; the din requiring attachment demands another. The tzitzis that must remain on the garment need only bow-length, may be any distance from the corner's edge, and may contain only *lavan* or *techeiles*. The tzitzis one must attach, however, must be complete, four fingerbreadths long, and a thumb-joint's breadth from the edge.

Besides explaining gardumin through the placement of these *dinim* within the making requirement, rather than remnants preserving the cheftza's status, this teaches two things about the mitzvah. First, it confirms what we learned from Rav according to the Rambam about spinning *lishmah*: Making tzitzis is a required *maaseh mitzvah*.

Second, making is not defined as creating the required static state of tzitzis on the garment. It is more than a formally commanded version of preparing the cheftza for later fulfillment. Its character is independent and not subordinate to the resulting state. If the required act were defined as creating that state, its parameters would necessarily derive from the state it creates. Creating a state cannot require more than the state itself requires.

We have therefore ruled out the possibility that the static fulfillment of tzitzis on the worn garment is primary, with making secondary and defined as its creation. Attachment must have a significance absent from the mere presence of tzitzis.

Two possibilities remain. Perhaps the mitzvah's two components are parallel and independent. We would then say that the halachah *leMoshe miSinai*, or rabbinic enactment, establishing four fingerbreadths and a thumb-joint's breadth itself assigns them only to one of these *dinim*. Alternatively, making is independently defined, while the obligation to have tzitzis on the worn garment derives from it, is subordinate to it, and is less demanding. That second possibility needs further explanation. If we adopt it, it will be easier to understand why the formal measurements apply only to the first *din*.

To clarify this, we shall examine *taaseh velo min ha'asuy*, "make, rather than use what is already made":

"Rachavah said in Rav Yehudah's name: A torn tallis, beyond three [fingerbreadths from the corner's edge]—one may sew it; within three—one may not. A *beraisa* likewise teaches: Beyond three, one may sew it; within three, Rabbi Meir says not to sew it, and the Chachamim permit sewing. All agree that one may not bring even a square *amah* from elsewhere [another tallis], with *techeiles* [tzitzis] on it, and attach it..." (41a).

The Gemara (40b) explains that not sewing a linen garment torn within three derives from *taaseh velo min ha'asuy*. The Rishonim dispute both the case and the meaning of "one may not sew."¹² Rashi understands a

¹¹ The ruling is nevertheless to practice stringency in accordance with *Rabbeinu Tam*. For the Ri, remnants of kinds apply only to Rebbi, not to the Chachamim.

¹² See Rashi 40b, s.v. *Gezeirah* and *VeYitperenu*; 41a, s.v. *Yitpor*, *Betoch Shalosh*, and *Lo Yitpor*; *Tosafos* 40b, s.v. *Shema*; and *Rosh*, *siman* 11, citing *Rav Amram Gaon*.

corner, even without tzitzis, cut off with less than three fingerbreadths from edge to tear. The prohibition is a rabbinic gezeirah: One might leave ends of sewing thread and later use them as tzitzis, invalid under min ha'asuy. Tosafos (40b, s.v. Shema) instead understand a tear between corner and garment, leaving a connection of less than three fingerbreadths from the tear's end to the edge. The corner is treated as detached. "Do not sew" is not a prohibition; it means that tzitzis already on the corner cannot be validated by sewing it back, because of min ha'asuy.¹³

The Nimukei Yosef, citing Rav Amram Gaon, understands a corner with tzitzis detached so that it contains less than three by three fingerbreadths. It loses shem beged, and therefore the strings lose shem tzitzis. Sewing it back is invalid under min ha'asuy. He writes:

"Beyond three...: A tallis with tzitzis whose corner tore near the tzitzis. Beyond three, he may sew, because the tzitzis were not annulled: A complete corner measure, three by three, remains. Within three, the tzitzis immediately lose their status, since no corner measure remains; sewing again is taaseh velo min ha'asuy" (12a in the Rif).

The Rambam likewise speaks of a detached corner already bearing tzitzis: "If a corner with tzitzis detached beyond three fingerbreadths, he sews it back in place; within three, he shall not sew" (1:18).

For Tosafos, sewing a tear beyond three is permitted because the three-fingerbreadth connection still counts as attachment. A fully detached corner, even three by three, is precisely their "within three" case and cannot be sewn back to validate its tzitzis. Any sewing of a detached corner with tzitzis involves min ha'asuy. The beraisa's prohibition of bringing even a square amah from elsewhere therefore makes sense, though its specification "from elsewhere" is less clear.

Rashi's min ha'asuy case does not involve an already fringed corner at all. On the beraisa's final clause, he explains: "From elsewhere—from another tallis, with techeiles, attaching it. Because we require 'on the corners of their garments,' and this corner was not part of this garment when made." Invalidity here derives from a separate gezeiras hakasuv, "on the corners of their garments," rather than min ha'asuy.¹⁴

¹³ The Rosh, siman 11, citing Rav Amram Gaon, describes a case like Rashi's: A corner, even without tzitzis, detached with less than three by three. He interprets "do not sew" to mean that, because the corner lacks garment status, it remains considered detached even after sewing, and tzitzis cannot even be attached afterward. The Taz objects (15:4): "Surely sewing makes them one. What difference is there between pieces torn and rejoined and a small piece originally sewn onto the garment's edge?" The Gra likewise says: "Sewing certainly constitutes attachment." He also objects that this view does not base invalidity on taaseh velo min ha'asuy, contrary to the Gemara at 40b.

¹⁴ For Rashi, a detached corner with tzitzis has no distinction between less than three and more than three. One might initially say both are valid and do not involve min ha'asuy; he therefore needs a special pasuk for a corner from another garment. The rationale would be that, although tzitzis on a detached corner are invalid, at least when it is smaller than three by three, sewing the corner onto the garment itself counts as making tzitzis. Rashi allows making tzitzis by sewing without tying, as 40b, s.v. Taaseh Velo Min HaAsuy, shows: Sewing threads are invalid only because they were not made lishmah. The chiddush would extend this to sewing outside the tzitzis themselves.

But this explanation cannot stand. Rashi's pasuk is "on the corners of their garments," preceded by "they shall make tzitzis." If sewing the corner counts as making tzitzis, even a corner from elsewhere would now be tzitzis made on this garment.

It therefore seems that Rashi does invalidate sewing a corner back under min ha'asuy, even one larger than three by three, because that corner is not a garment obligated in tzitzis: It lacks the size covering a child's head and most of his body. Rashi says above (40b, s.v. Hayu Matilin Bah Techeiles) that attachment before enough cloth is woven to cover the child's head and most of his body involves min ha'asuy, though his conclusion there appears contradictory; see Shitah Mekubetzes, note 14. Only a square-amah corner, which has that minimum size, would be valid, except when it comes from another garment, under "on the corners of their garments."

The Rambam and Nimukei Yosef in Rav Amram's name remain difficult. They permit sewing a corner detached beyond three without min ha'asuy, yet explicitly invalidate a square amah from another garment under that very din. The Nimukei Yosef writes:

"All agree—even the opinion permitting sewing beyond three because the corner's status was not lost agrees that he may not bring even a square amah from elsewhere and place it on his tallis, where the tzitzis area remains but most of the rest of the garment tore, since this is min ha'asuy. This explanation is attributed to Rav Amram z"l and Rav Tuviah z"l, and the Baal Halachos likewise explains it."

The Rambam writes: "Tzitzis made from what was already made are invalid. How? He brought a corner with tzitzis and sewed it onto the garment, even a square amah, it is invalid, for it says, 'They shall make tzitzis'—not from what is already made, for this resembles something made by itself" (1:12-13).

This approach fits the beraisa well: It explains both "from elsewhere," unlike Tosafos, and why the square-amah case qualifies permission to sew beyond three, unlike Rashi, who gives the two clauses different sources. But why should min ha'asuy distinguish a corner from another garment from a corner of the original garment? Its invalidity before sewing, and the sewing itself, are identical.

Also, how can a corner detached beyond three be validated? Although three by three retains shem beged, it is not a garment suitable for tzitzis. We learned: "Rav said in Rav Sechorah's name, in Rav Huna's name: If he attached them to a three-cornered garment and completed it to four corners, it is invalid [because of] min ha'asuy" (40b).

Validating tzitzis on an unsuitable garment thus counts as min ha'asuy. Clearly, we must distinguish: In the three-cornered case, the initial making was on an unsuitable garment, whereas in the torn garment, initial making was valid and invalidity arose afterward. But that distinction itself needs explanation. Why does initially valid making become min ha'asuy only when shem beged is subsequently lost entirely, whereas initially invalid making is min ha'asuy even without complete loss of that status?

The Rambam and Nimukei Yosef's ruling on a corner from elsewhere proves that taaseh velo min ha'asuy requires the tzitzis to have belonged to this garment since their making. Elsewhere, the Rambam explains this principle not as a new pasuk establishing a positive category of invalidity called min ha'asuy, but as a particular requirement within the mitzvah's definition. For sukkah, it is essentially making for shade (Hilchos Sukkah 5:9); for mezuzah, an act of affixing to the doorway (33b; Hilchos Mezuzah 5:8).

Here too, there is no newly defined disqualification. The garment must contain tzitzis that came to it through an act of attachment. The duty to have tzitzis is defined by the original required making: The tzitzis present must be those whose making the first din requires. Taaseh velo min ha'asuy requires them to have arrived through that required act, rather than otherwise. There must consequently be continuity between the original making on the garment and their present presence. No additional pasuk is needed to require their presence on this garment from making onward; that is the very content of min ha'asuy.

A square amah from another garment may have perfectly valid tzitzis, but no act of making those still-present tzitzis was performed on this garment. Its duty remains unfulfilled: It has four corners without tzitzis attached through the required act. Sewing the corner does not count as making tzitzis on the garment.

With a corner torn from the same garment, however, those tzitzis were previously attached to that very garment. Although sewing is not the maaseh mitzvah, the required original making has already occurred. If the detached corner is smaller than three by three, the original act likewise occurred, but because the corner is no longer a garment, the strings cease to count as tzitzis. This breaks the continuity between the original act and

the tzitzis now present after sewing. They are no longer the same halachic tzitzis originally attached before the tear.

The original making must of course be on a garment suitable for tzitzis at that time.¹⁵ Attachment to a three-cornered garment is therefore invalid, and adding a fourth corner cannot help. But if the garment was suitable when made and became unsuitable only afterward, that does not remove the strings' shem tzitzis. Reattaching them to the original garment preserves continuity of identity between the original tzitzis and those now present.

The Gemara invokes *taaseh velo min ha'asuy* when the deficiency is in original making, as with three corners; that is also the Rambam and Nimukei Yosef's meaning for a corner from elsewhere. It also invokes the same principle when the original making was valid but continuity is lost, as with a garment torn within three. The present tzitzis are deficient because, no longer being those originally made on the garment, they themselves were never attached through the required act.¹⁶

On this basis, *gardumin* means that, although the obligation to have tzitzis on the worn garment concerns the same tzitzis attached through the required act, with continuous identity from attachment to wearing, this

¹⁵ We will not address whether suitability for the complete four-cornered mitzvah suffices, or whether the garment must actually be obligated, excluding one too small to cover a child's head and most of his body. See the beginning and end of Rashi 40b, s.v. *Hayu Matilin Bah Techeiles*; *Shitah Mekubetzes*, notes 14 and 3.

¹⁶ For attaching a second set to existing tzitzis (40b), Rav Pappa distinguishes intent to add, where *bal tosif* means it does not count as an act, from intent to replace, where it does. Rashi asks whether an initial act disqualifies, making subsequent validation *min ha'asuy*. Under our explanation, the Rambam does not treat *min ha'asuy* as a positive disqualification, and cannot read the Gemara that way. He therefore explains the act (1:15) as one that validates, fulfilling the affirmative attachment requirement. He consequently validates intent to replace and invalidates intent to add. On this reading, Rava disputes Rabbi Zeira about attaching a second set rather than reconciling him; Rav Pappa reconciles him by limiting the ruling to intent to replace. This differs from the *Kesef Mishneh*.

An echo of another understanding may appear in the *beraisa* at 41a. Following Rabbi Meir and the Chachamim's dispute over a torn tallis, it states: "All agree that one may bring *techeiles* from elsewhere and attach it." Rashi explains that *min ha'asuy* is absent because one must wind and prepare it anew here. Besides the question of degrading a mitzvah by untying from one garment to another, disputed by Rav and Shmuel (41b), there was apparently a *hava amina* of invalidity under *min ha'asuy*. The Rambam's placement of this rule (1:13), "One may untie tzitzis from this garment and attach them to another, both *lavan* and *techeiles*," after *min ha'asuy* also shows a *chiddush* in that context.

This possible understanding treats *min ha'asuy* as creating the *cheftza* of tzitzis on the garment, rather than a *maaseh mitzvah*, excluding tzitzis created before attachment. It further assumes that *shem tzitzis* remains after untying, which itself needs examination.

The Gemara continues: "Provided they are not *mufsekes*." Rashi and Rabbeinu Gershom understand this as requiring whole threads at making, excluding *gardumin*. But why is that relevant here, and what is new? *Tosafos*, s.v. *U'Vilvad*, ask what it means and teaches. *Nimukei Yosef* (12a in the Rif) says he does not know whether the *girsas* is correct and has seen no explanation; see *Chiddushei Anshei Shem* there.

Mufsekin appears elsewhere too (*Eruvin* 96b). See the note at the beginning of Part Two for an Acharonic interpretation of the Rambam referring to a thread half *techeiles* and half *lavan*. We could apply that here: The *beraisa* permits transferring *techeiles*, but not a divided thread, because of its *lavan* portion. *Min ha'asuy* would then invalidate *lavan*, not *techeiles*. For this *beraisa*, *lavan* requires creating the *cheftza* on the garment, while *techeiles* requires the act of mitzvah, as we explained. This fits the *pesukim*: *Lavan* has "they shall make," creating the *cheftza*; *techeiles* has "they shall place," requiring the act itself.

The Rambam's emphasis (1:13) on permitting transfer "both *lavan* and *techeiles*," unlike this proposed reading of the *beraisa* and following Shmuel's undifferentiated rule, may support his recognizing a possible distinction. The Sifri, Shelach 115, likewise emphasizes attachment through "they shall place": "They shall place on the corner's tzitzis"—why is this stated? Since 'they shall make tzitzis' might mean weaving it together with the garment, it says 'they shall place.' How? Sewing it with the garment." Alternatively, *lavan* and *techeiles* may differ because *techeiles* need not attach directly to the garment at all, a possibility considered in Rebbi's view in a note at the end of Part Two.

continuity requires only the basic identity of tzitzis. It does not include the specific requirements of the original act.

The Rambam's arrangement fits remarkably well. Although he bases both sewing a garment torn within three and bringing a square amah from elsewhere on min ha'asuy, he separates the beraisa's two dinim in chapter 1. Halachos 12-13 discuss the requirement that tzitzis originate in a maaseh mitzvah: A non-Jew cannot make them; a Jew needs no special intent; and min ha'asuy invalidates a square amah from elsewhere. Halachah 18 discusses requirements of making that do not persist in the subsequent presence of tzitzis on the garment and includes sewing back a detached corner of at least three fingerbreadths, the thumb-joint distance not being required after making, and gardumin of thread length.

Our principle—that the tzitzis present must originate in the required attachment act—proves these are not two disconnected dinim, but two focuses of one underlying din. It has two stages: Making tzitzis, and continuity of that act through their presence on the worn garment. How do these stages form one process, and what character does it have?

Concerning bow-length, the Gemara asks: "Rav Ashi asked: Thick threads that cannot be tied in a bow, but could if thin [they are sufficiently long, but thickness makes tying difficult]—what is the din? Rav Acha son of Rava answered Rav Ashi: All the more so their mitzvah is recognizable" (38b).

The Gemara validates thick remnants that would tie if thin because bow-length depends on their mitzvah being recognizable. Bow-length is therefore not a measurement defining the bare factual status of tzitzis, below which that status disappears. It is functional: It makes the tzitzis recognizable. Bow-length provides that recognizable sign, which suffices to validate gardumin.

It therefore seems that the requirement of continued tzitzis on the garment preserves the impression of the act. The Torah requires attachment, followed by a lasting impression on the garment recalling the original act. The combined process is not two duties—making and having a tzitzis cheftza, with an extra condition that it be the same tzitzis. It is one duty: Making tzitzis and preserving the act's impression on the garment. "Their mitzvah is recognizable" means that four fingerbreadths measures the act; only its recognizable impression must remain to recall that act. Bow-length gives that recognition.

This can be understood through tzitzis as a badge of servitude, as explained at the end of the previous section. Tzitzis signify the person's status as Hashem's servant by demonstrating acceptance of His authority through obeying His command to have tzitzis on his garment. We can now add that the primary expression of accepting the Master's authority lies specifically in attachment. The continuing presence of tzitzis identifies the person's servitude by recalling that initial act. The mitzvah is accepting ol malchus Shamayim through an initial act directly expressing obedience to Hashem's command to furnish every qualifying garment he wears, and preserving its required result as a state declaring that he is an eved Hashem.

"Hashem said to Moshe: Speak to Bnei Yisrael and tell them: They shall make tzitzis on the corners of their garments and place a thread of techeiles on the corner's tzitzis"—the command to make; "It shall be tzitzis for

you”—the command that the tzitzis made remain continuously on the garment;¹⁷ “You shall see it and remember all Hashem’s mitzvos”—they then identify the wearer’s acceptance of mitzvos.

Part Two: Techeiles and Lavan

“A beraisa teaches: How many threads does he attach? Beis Shammai say four; Beis Hillel say three.... Rav Huna says four.... Rav Yehudah says three.... Rav Pappa says: The halachah is four...” (41b).

The beraisa does not specify how many threads are techeiles. All the Rishonim agree that techeiles and lavan together total four threads, folded to produce eight ends. They dispute the number of techeiles threads:

1. The Rambam (1:6), also apparently Rav Shmuel bar Chofni Gaon, Sefer Dinei Mitzvas HaTzitzis, chapter 4,¹⁸ requires seven white ends and one blue after folding. In a responsum (Blau 286), the Rambam explains that a thread should be spun half blue and half white, leaving only one blue end after folding.¹⁹
2. The Raavad, gloss to 1:6, and Aruch, entry Techeiles, require three white threads and one blue.
3. Rashi (38a, s.v. HaTecheiles), Tosafos there and 41b, s.v. Beis Shammai, and most Rishonim require two white and two blue threads.²⁰

Tosafos’s source is the Sifri: “How many cords are made? No fewer than three threads, according to Beis Hillel. Beis Shammai say four threads of techeiles and four white threads...²¹ The halachah follows Beis Shammai” (Ki Seitzei 234).

The Raavad’s source is another Sifri beraisa: “How many cords do you make? No fewer than three, according to Beis Hillel. Beis Shammai say three of wool and a fourth of techeiles. The halachah follows Beis Shammai” (Shelach 115).

The Rambam has no explicit source. We will see that his disagreement with the other Rishonim may depend on disputes among Tannaim and Amoraim.

¹⁷ I have read “It shall be tzitzis for you” as referring to all the tzitzis, not only techeiles. This depends on tzitzis being grammatically masculine rather than feminine. If feminine, the pasuk would have needed ve’haysah rather than ve’hayah to say the tzitzis made should remain tzitzis on the garment when worn. We would then have to read it as referring to the techeiles thread, as Ibn Ezra’s first explanation does: “A thread of techeiles—on the tzitzis.... It shall be tzitzis for you—the thread becomes an end-fringe like the tzitzis.”

In Chazal’s language, tzitzis is feminine; Tanach gives no conclusive evidence either way. If its etymology is tzitz, an ornament, borrowing the meaning of blossoming, the final -is is a suffix and a feminine noun is plausible. If the tav belongs to the root rather than a suffix—a suggestion supported by tzitzis always being written defectively, צִצִּית, not only in this parshah but also in Yechezkel 8:3—it could certainly be masculine.

“You shall see it” can likewise refer to all the tzitzis, rather than only the techeiles thread, only if tzitzis is masculine. Whether tzitzis without techeiles are a visual identifying sign depends on that. Menachos 38a seems indeed to refer to all the tzitzis: “What is Rabbi’s reason? ‘The corner’—material like the corner; ‘a thread of techeiles’; and the Torah says ‘you shall see it’—until both are together as one.” Even the Chachamim say only that the phrase implies seeing each separately, not that it refers exclusively to techeiles.

¹⁸ Published by Rav Eliyahu Tavger at the end of his Kelil Techeiles, Jerusalem 5753/1993.

¹⁹ Some challenge this from Eruvin 96b, which discusses signs identifying techeiles as intended for tzitzis, since dyeing lishmah is required. If half the thread is white and half blue, that should itself indicate tzitzis and should have appeared as a possible validating sign. Rav Kapach, in his edition of the Rambam at 2:7, explains that the Rambam understood mufsekin in that Gemara precisely as a half-blue thread; the discussion concerns whether that sign suffices.

²⁰ However, the Midrash cited by Rashi on Bamidbar 16:1 speaks of one blue thread.

²¹ The Gra changes the text to “three white threads and a fourth of techeiles,” following the Raavad.

The thread-count dispute results from a more fundamental dispute over defining the mitzvah of pesil techeiles. For the Rambam, the Torah's mitzvah is to wind a thread of techeiles around the tzitzis:²² "One takes a woolen thread dyed like the sky and winds it around the fringe.... This mitzvah contains two commands: To make a fringe extending from the corner, and to wind a techeiles thread around that fringe" (1:2-3). "The mitzvah of techeiles is that the pesil [the windings] be entirely techeiles" (Responsa, Blau 286).

It is consequently clear that one side of the thread need be blue. For Tosafos and Raavad, techeiles is an additional kind, parallel in status to lavan, with a prescribed number of threads for each. Tosafos say: "It is logical to make them equal" (41b, first s.v. Beis Shammai); "Since the Torah requires two kinds, it is logical to make them equal" (38a, s.v. HaTecheiles). The Raavad, discussing the winding order in his gloss to 1:7, says: "Why more techeiles than lavan?... This is nothing but a great error."²³

This dispute depends on "They shall place on the corner's tzitzis a thread of techeiles." Al can mean either "on top of," as the Rambam understands, or "in addition to," as in "The men came with the women" (Shemos 35:22), as Tosafos and Raavad understand.²⁴

Mishkenos Yaakov, Orach Chaim 13, explains that the dispute also concerns pesil, from twisting. Perhaps the thread itself is twisted: The requirement of shazurin in Sifri Shelach, a requirement in the thread's form that also applies to lavan. Alternatively, the thread twists around the lavan; it then refers to winding, and only to techeiles, as the Rambam holds. The Rambam indeed calls the winding pesil in his responsum, Blau 286, and therefore does not require shazurin (1:10 and that responsum).

Techeiles's role as a winding thread cannot, for the Rambam, merely be to bind the tzitzis and create the gedil. If that were its function, it should require at least one chulyah of three windings, the minimum gedil described in the Gemara: "Even if he wound only one chulyah, it is valid.... What is a chulyah's measure? Rabbi says: Enough to wind once, twice, and three times" (39a; Rambam 1:8-9).

Yet the Rambam explicitly validates less than a complete blue chulyah: "The number of windings of this thread has no Torah-prescribed measure" (1:2). Its winding function must instead decorate and beautify the tzitzis, just as pesil elsewhere, meaning a twisted strand, denotes an ornamental twist.

"A teaching states: One who uses fewer must not use fewer than seven [for most Rishonim, seven chulyos of three windings each]; one who uses more must not exceed thirteen [chulyos]. Seven correspond to the seven heavens; thirteen correspond to the seven heavens and six spaces between them. When beginning, he begins with lavan—the corner, material like the corner. When ending, he ends with lavan—we ascend in holiness and do not descend" (39a).

²² The Zohar, Shelach 175a, likewise says: "It does not say 'place on the corner,' but 'place on the tzitzis,' because it covers the other threads." This also seems to follow from Aruch, entry Techeiles, "It is what he winds around the seven," and Sefer HaChinuch, mitzvah 386, "They wind the techeiles thread around the lavan...."

²³ The Netziv, Haamek She'eilah, she'ilta 127, note 11, explains the Raavad's complete blue thread as agreeing in principle with the Rambam that techeiles winds, but adding a requirement of a whole thread. The Raavad's comments on the winding order strongly indicate otherwise. Logically too, if techeiles's entire role is winding, it should suffice to attach it so the finished tzitzis contain blue winding. Even if completeness is required, one complete side should suffice, since it is a complete thread in the finished tzitzis. The Aruch, however, does seem to hold the view that the Netziv attributes to the Raavad.

²⁴ The Targum attributed to Yonasan follows this explanation: "They shall place on the corner of their cloak a twisted blue thread." The blue thread is not literally on the tzitzis, but on the corner; al therefore means "in addition," not "on top." Chizkuni on Bamidbar 15:38 likewise interprets al as "with." The Raavad, gloss to 2:8, even bases a halachah on this reading: "The Torah said 'on the tzitzis'... meaning that it should come last."

Apart from beginning and end, the Rishonim dispute the chulyos' color. The Rambam reads the unspecified middle as all blue, as Rashi also does, because the mitzvah of techeiles lies in winding (1:7; Responsa 286). Others give blue no preference over white and alternate colors, by chulyah or winding (Raavad, gloss to 1:7; Tosafos 39a, s.v. Lo; others). This dispute too depends on whether techeiles's role is winding.

"Rava said: Learn from [the sons of Rabbi Chiya validating worn-down techeiles] that one must tie a knot for each chulyah [after winding the gedil thread three times]. For if only the final knot were needed, when that knot loosened the whole winding would unwind, leaving no gedil; why would gardumin be valid? Perhaps it speaks of a case where he did tie [each chulyah: The sons of Rabbi Chiya may validate gardumin only in that case]" (38b-39a).

Tosafos and Rosh give the simplest purpose of a knot per chulyah: Making blue chulyos distinguishable (Tosafos 39a, s.v. Lo Yifchos; Rosh, siman 15). This assumes all chulyos are blue; alternating colors already distinguish them. Other explanations, such as producing five knots or generally stabilizing the gedil, could be proposed somewhat forcibly. The Rambam may regard distinguishing the chulyos as the only possible purpose.

Rav Amram Gaon, Geonica II, p. 330, requires alternating chulyos and does not rule that each needs a knot, since Rava's proof was rejected. The Rambam may understand that Rava retained his position and held all chulyos blue, implying techeiles's function is winding. This sugya could therefore be his source. Rav Amram may agree that a knot per chulyah and all-blue chulyos depend on one another, disagreeing only about the ruling.

To clarify the Rambam's foundation for techeiles as winding, we must examine the opening sugya of Perek HaTecheiles about whether each kind is indispensable.

The Mishnah says: "Techeiles does not prevent fulfillment of lavan, and lavan does not prevent fulfillment of techeiles" (38b). The Gemara asks: "Is our Mishnah unlike Rabbi? A beraisa teaches: 'You shall see it' teaches that they prevent one another's fulfillment, says Rabbi; the Chachamim say they do not. Rabbi's reason is: 'The corner'—material like the corner [lavan]; 'a thread of techeiles'; and 'you shall see it'—until both are together. For the Chachamim, seeing each separately is implied. Must [the Mishnah] be unlike Rabbi?... Rava answers: It refers only to gardumin: If techeiles wore away while lavan remained, or lavan wore away while techeiles remained, there is no problem, as Rabbi Chiya's sons validate techeiles remnants.... Which Tanna disagrees with Rabbi? Rabbi Yitzchak, citing Rabbi Nassan, citing Rabbi Yosi HaGelili, citing Rabbi Yochanan ben Nuri, says: If he has no techeiles, he attaches lavan" (38b-39a).

The conclusion is that Rabbi and the Chachamim dispute mutual indispensability at making; all agree that afterward, for gardumin, neither prevents the other. Baal HaMaor (Shabbos 12a in the Rif) rules like Rabbi, but the other Rishonim, including Ramban in Milchamos, follow the Chachamim.

Some challenge the Rambam from the Chachamim. If lavan is not indispensable even initially, techeiles alone may be attached. But if techeiles's whole mitzvah is winding, what meaning does it have without lavan?

The Rambam rules: "Techeiles does not prevent lavan, nor lavan techeiles. How? If he has no techeiles, he makes lavan alone. If he made both, and lavan broke and shortened to the corner while techeiles alone remained, it is valid" (1:4).

Thus, techeiles's absence is permitted initially; lavan's absence is permitted only as gardumin. Initially, lavan does prevent techeiles's fulfillment. This answers our question and preserves the Rambam's internal consistency, but raises another: Whom does he follow? Apparently neither Rabbi nor the Chachamim! See Kesef Mishneh there and on halachah 18.

The Rif omits Rebbi and the Chachamim's beraisa entirely and brings only Rabbi Yochanan ben Nuri's: "If he has no techeiles, he attaches lavan" (Hilchos Ketanos, Hilchos Tzitzis 11a-b). Apparently, the Rif and Rambam understand that Rabbi Yochanan ben Nuri, stating non-indispensability in only one direction, does not wholly follow the Chachamim. Techeiles is not indispensable to lavan even initially, like the Chachamim; lavan is indispensable to techeiles initially, like Rebbi.

This permits lavan without techeiles, but not the reverse. What explains the asymmetry? Techeiles must build upon and complete lavan as an additional layer. That makes no sense if techeiles is simply another parallel kind. It therefore makes sense that Rabbi Yochanan ben Nuri defines techeiles through winding.²⁵ The Chachamim necessarily treat techeiles as a parallel kind, since they permit it without lavan. Rebbi treats the two together as one entity, leaving his position on winding undetermined.

The Rambam thus understands the Chachamim and Rabbi Yochanan ben Nuri as disputing the same issue as the Rishonim: The latter agrees with the Rambam, the former with Tosafos and Raavad. The Sifri beraisos prescribing separate counts for two parallel kinds follow the Chachamim. We have found a foundation for the Rambam, but still must ask why he follows Rabbi Yochanan ben Nuri, the individual, against the majority.²⁶

"Rav and Rabbah bar bar Chanah were sitting. A man passed wearing an entirely blue garment with tzitzis wholly made into gedil [wound, with no loose fringe]. Rav said: 'The garment is fine, but the tzitzis are not [because they lack loose fringe].' Rabbah bar bar Chanah said: 'Both are fine.' Their dispute is: Rabbah bar bar Chanah reads 'gedil' and 'pesil' as either one; Rav says pesil is always required, while 'gedilim' teaches the number: Gedil, two; gedilim, four. [Pesil:] Make a gedil and twist it from within" (39a-b).

All the man's tzitzis were wound, without loose anaf. Rabbah bar bar Chanah permits this, and would also permit entirely loose fringe with no wound section; Rav requires both gedil and pesil. Rashi's explanation faces several difficulties.

²⁵ Even an opposing view describes techeiles as an additional halachic layer on lavan (Raavad 2:8), but only for mitzvah min hamuvchar (38b), not as an indispensable feature of the mitzvah's definition.

²⁶ The Rambam apparently sees another Tannaitic dispute here. Menachos 41b contrasts two beraisos about using kala ilan as lavan in a garment with techeiles: One invalidates it; the other forbids it lechatchilah but validates bedieved. The Gemara distinguishes a four-thread tallis from an eight-thread tallis. Rashi identifies two restrictions on kala ilan with techeiles: Two distinct colors are required, and a gezeirah fears transferring kala ilan as genuine techeiles to linen. One restriction is lechatchilah and the other indispensable; Rashi gives two versions of which is which.

The Rambam (2:8) gives only one: "He makes its lavan from other colors except black [kala ilan], because it resembles techeiles." His formulation is lechatchilah and apparently concerns distinct colors. Why omit the invalidating din of one beraisa?

He must understand four versus eight threads not as merely different cases, but different practices reflecting the Tannaitic dispute underlying his disagreement with the other Rishonim. A four-thread tallis has one blue end out of eight at each corner, totaling four blue ends across the garment, like Rabbi Yochanan ben Nuri and Rambam. An eight-thread tallis has two blue ends at each corner, like the Raavad. The Gemara assumes both practices existed and ties kala ilan to their dispute.

The Rambam validates kala ilan bedieved, following the second beraisa. He therefore understands it as valid lavan for the four-thread view and invalid for the eight-thread view; his stating only the din matching his own position becomes clear.

If techeiles is another parallel kind, lavan necessarily cannot be blue, since the Torah commands two kinds. A similar rationale appears at the end of Tosafos 38b, s.v. Midi, though there it concerns genuine techeiles; here even its color, including kala ilan. If techeiles serves a different function, however, there is no basic obstacle to the tzitzis, lavan, also being blue, as actually occurs in the Rambam's blue thread, explained below. Lechatchilah, as a din of techeiles rather than lavan, it should stand out against another color; kala ilan should therefore not be attached. That is the four-thread beraisa's din and the Rambam's ruling.

On this reading, the Gemara at 40a permitting kala ilan as lavan follows the four-thread beraisa, like the Rambam, against the eight-thread beraisa matching the Raavad. This too may support his ruling like Rabbi Yochanan ben Nuri.

1. The Gemara gives a beraisa: “‘Tzitzis’ means only anaf, a fringe, as in ‘He took me by a lock of my head’” (Yechezkel 8:3; Menachos 42a).

The Sifri, Shelach, likewise says: “‘They shall make tzitzis’—I might think entirely fringe; ‘gedilim’ excludes that. I might think entirely gedilim; ‘tzitzis’ excludes that. How, then? Gedil emerges from the corner, and fringe from the gedil.” Anaf derives from tzitzis. These beraisos challenge Rabbah bar bar Chanah, and why does Rav need pesil for a requirement already derived from tzitzis? Tosafos ask this at 39b, s.v. O.

2. Rav concludes, “Make a gedil and twist it from within.” The Rishonim offer several explanations:

A. Rashi: The winding thread must be included in the count. This fits the wording, but why teach that here? B. Rashi’s second explanation: Put loose fringe below. Tosafos, s.v. U’Fosleihu, ask that tzitzis already teaches anaf; moreover, “from within” does not fit—“from it” or “after it” would seem appropriate. C. Tosafos: Folding the threads into the garment. Again, “from within” should seemingly be “into it,” and its relevance is unclear.

Mishkenos Yaakov, Orach Chaim 13,²⁷ gives a brilliant alternative. “Wholly made into gedil” means not that the entire fringe was wound, but that its gedil was braided, like maaseh avos, rather than wound; this is the meaning of gedil throughout. Shabbos 10:6 uses ha’godeles for braiding hair. Onkelos translates gedilim with a term understood as braiding, keruspedin, from Greek kraspedon.²⁸

Rabbah bar bar Chanah permits either gedil or pesil: Binding by braiding or winding. Rav always requires pesil, winding. Gedilim teaches only the count of bundled threads, four, not the binding method. “Make a gedil and twist it from within” means gather the threads and wind them with one of their own number. Thus, the winding thread belongs to the count, and all the difficulties are resolved.

Mishkenos Yaakov says the Rambam reads the sugya this way. His responsum, Blau 286, indeed calls the wound section pesil. According to Rav, whom we follow, winding is specifically required through pesil, the din of pesil techeiles. This explicitly supports the Rambam. He follows Rabbi Yochanan ben Nuri against the Chachamim because Rav holds like him.

For Tosafos and Raavad, each kind has a separate count. The Gemara’s beraisa is consequently somewhat difficult: Unlike the Sifri, it simply specifies four threads without dividing them by kind, rather like saying that seven things are taken on Sukkos. For the Rambam, this is understandable. “Twist it from within” includes the blue thread in the tzitzis count. This is not merely a technical statement that the total includes blue and white. The pasuk establishes that one of the lavan threads is also the techeiles thread; lavan need not literally be white (Rambam 1:1). Techeiles creates no additional thread requirement: One lavan thread fulfills both dinim. The beraisa’s four threads measure lavan’s own count.

For Tosafos and Raavad—and, even in the Rambam’s reading, the Chachamim, Rabbah bar bar Chanah, and Sifri—techeiles is another parallel kind, pesil means a twisted thread, and its din naturally applies to separate threads. The Torah commands tzitzis, lavan, plus techeiles threads, each with its own count. For the Rambam, the Gemara’s beraisa requiring four lavan threads, with techeiles also fulfilling lavan, disagrees with the Sifri’s separate-thread beraisos. This is Rabbi Yochanan ben Nuri and Rav against the Chachamim and Rabbah bar bar Chanah.

²⁷ Mishkenos Yaakov discusses tzitzis with exceptional depth and breadth. MiBeis Midrasho Shel HaRav, p. 76, reports the Rav’s statement that its discussions of tzitzis have the stature of a Rishon’s writings and must be read line by line.

²⁸ The Septuagint also translates strepta. Encyclopaedia Biblica, entry Gadai, understands braiding, but the Greek dictionaries I consulted do not limit the meaning exclusively to braiding.

Under the parallel-kinds approach, logic suggests that lavan without techeiles should contain only lavan's count: Two threads for Tosafos, three for Raavad. Tosafos (38a, s.v. HaTecheiles) say that this would indeed be the logical conclusion, but bring proofs that four white threads are required and offer strained reconciliations.²⁹ The Rambam has no need for those answers; Tosafos's proofs of four white threads when techeiles is absent actually support him.

Under the Rambam's approach, the gardumin rule that techeiles can disappear while lavan remains cannot operate: Losing the blue thread also loses one lavan thread, so the remaining white threads cannot validate it. His wording indeed implies this.

Rabbeinu Tam (38b, s.v. Ella; Rosh, siman 7) treats bow-length gardumin as part of the remnants-of-kinds rule: One kind may diminish if it retains bow-length and the other remains complete. The Rambam cannot hold this, since 1:18 requires bow-length without conditioning it on one complete kind. He agrees with the Ri³⁰ and Rosh that bow-length is independent. The remnants-of-kinds din raised according to Rebbi is therefore also independent of bow-length. For lavan, this is Rambam 1:4: If it shortens to the corner, the tzitzis remain valid.

He thus disagrees with the Ri and Rosh's view that remnants of kinds apply only to Rebbi, who counts one mitzvah, while halachically there are two mitzvos and that din does not apply. Instead, like Rabbeinu Tam, he applies remnants of kinds in practice. Indeed, he counts techeiles and lavan as one mitzvah (Sefer HaMitzvos, shoresh 11, asech 14; heading to Hilchos Tzitzis; 1:5).

Yet he never rules that techeiles may fall below bow-length when lavan remains. In 1:18, he does not distinguish a shortened blue thread, where lavan exists since techeiles alone cannot initially be attached, from shortened white threads where techeiles is absent—the case of shortened lavan with techeiles present was already validated in 1:4.³¹ He gives no leniency below bow-length for techeiles; every case apparently requires it. Remnants of the techeiles kind therefore do not apply in the Rambam's practical ruling. As explained, the blue thread is also a lavan thread, so losing techeiles loses one lavan thread too.

Rebbi, who permits remnants in both directions, must therefore hold that the blue thread is not one of the lavan threads. Initially, this suggests that he agrees with the Chachamim that techeiles does not function as winding, unlike Rabbi Yochanan ben Nuri, although he requires both together when made.

Rabbi Yochanan ben Nuri, Rav, and Rambam can be understood in two ways:

1. Techeiles has no independent thread identity, only the function of blue winding; only the winding side must therefore be blue.³²

²⁹ Tosafos explain that gedil-gedilim requires four threads in all circumstances, whether lavan without techeiles or techeiles without lavan. Their explanation of the Gemara's hava amina, lacking the mitzvah of lavan, still validates techeiles through four threads. There are then three dinim: Four total threads, two white, and two blue.

At 38b, s.v. Ella, Tosafos say that without techeiles, two additional white threads are supplied "for techeiles." Even the Ri there recognizes two threads for techeiles: He invalidates one below bow-length only because the Chachamim treat the two as separate mitzvos. There are then four dinim: Four total threads; two for lavan; two "for techeiles"; and those latter two being blue. Only the final din is dispensable.

³⁰ The yesh mefarshim in Tosafos and Rosh is the Ri, as Mordechai 939 clarifies. The Mordechai's later reconciliation does not seem to fit the Ri, either logically or from Tosafos and Rosh.

³¹ The Kesef Mishneh asks how 1:4 validates lavan shortened to the corner when 1:18 invalidates even one thread severed at its root. This is no real difficulty. Halachah 18 plainly relies on halachah 4 and concerns cases that cannot rely on complete techeiles: No techeiles, or shortened techeiles.

³² Only the wound portion would need to be blue, even less than one full side—for example, a white tip continuing into the loose fringe. My rebbi, Rav Aharon Lichtenstein shlita, inclines toward this explanation. He said that a thread blue on its exterior but white within its thickness would then be valid for the Rambam, since it presents blue winding.

2. Techeiles does have thread identity and must be complete. But because its din is winding, it describes the finished tzitzis rather than the object used in attachment. A complete thread in the final form is one side of the original folded thread, just as four fingerbreadths measures finished tzitzis, not the threads before attachment.³³

The second explanation introduces a chiddush: Though techeiles and lavan each have defined identities, both dinim can exist in one thread-cheftza. It is unclear that two dinim each defining a distinct cheftza can coexist in that same cheftza.

“Twist it from within,” requiring the winding thread to belong to the count, supports the first explanation. Not only can techeiles and lavan coexist in one thread; they must. If techeiles had an independent thread identity, whether one side as in the second explanation or both sides as the other Rishonim, Chachamim, and Rabbah bar bar Chanah hold, why could it not be a separate thread added to lavan? If its din is merely the appearance of blue winding, however, no additional legally superfluous thread may be attached (see Sanhedrin 88b-89a).

The familiar Midrash about Korach says: “Korach sprang up and asked Moshe: ‘May an entirely blue tallis be exempt from tzitzis?’ Moshe answered that it requires tzitzis. Korach replied: ‘An entirely blue tallis cannot exempt itself, but four threads exempt it?’” (Bamidbar Rabbah 18:3; variations in Yerushalmi Sanhedrin 10:1 and Rashi on Bamidbar 16:1).

Korach’s argument concerns techeiles, but his proposed exemption is from all tzitzis, apparently including lavan. The Midrash assumes that lavan’s entire role concerns techeiles: If techeiles is unnecessary, lavan is too. Korach’s error is clearly not about their relationship; that is an underlying assumption independent of his sin. The Midrash therefore assumes no lavan without techeiles, meaning techeiles is indispensable initially, like Rabbi.

It says more: Lavan has meaning and is needed only in relation to techeiles. The two apparently form one cheftza, dominated by techeiles, with lavan serving it. Techeiles seems to wind around lavan as its base. Rabbi Yochanan ben Nuri also treats techeiles as winding, but requires lavan even without techeiles, unlike the Midrash. The Midrash must therefore follow Rabbi and understand him as requiring winding.

Earlier, however, we inferred from Rabbi’s techeiles gardumin that he agrees with the Chachamim against winding: Techeiles could disappear without lavan, unlike Rabbi Yochanan ben Nuri’s requirement that the blue thread also be a white thread. The Gemara and Midrash may interpret Rabbi differently, but if we avoid multiplying disputes needlessly, we must say Rabbi agrees that techeiles winds, but permits its thread to be additional to the lavan threads rather than identical with one, unlike Rabbi Yochanan ben Nuri. Why then does Rav introduce “from within,” attributing the opposite point to Rabbi Yochanan ben Nuri?

It seems that whether techeiles must be one lavan thread or may have independent thread identity depends on whether it is indispensable to lavan initially. Only when it is indispensable can it be an independent additional winding thread, permitting its own gardumin din. The underlying dispute can be explained as follows.

For Rabbi, techeiles is the primary fulfillment, with lavan its base. For Rabbi Yochanan ben Nuri, lavan is basic, while blue supplies an additional layer through appearance. Rabbi’s primary techeiles therefore has independent thread identity and can be separate. For Rabbi Yochanan ben Nuri, it merely decorates lavan and has no separate thread requirement; no extra thread may be added. Rabbi therefore cannot allow lavan without techeiles, while Rabbi Yochanan ben Nuri requires it when techeiles is unavailable.

³³ This does not contradict the techeiles-gardumin rule that techeiles’s requirement applies only when made.

For the Chachamim, the two do not form one fulfillment at all; asking which is primary is inapplicable, since each is independent.

The pasuk does not say that pesil techeiles must attach directly to the garment's corner. For the Chachamim, direct attachment is learned from lavan because techeiles functions identically: "On the corner's tzitzis" means "in addition to." For Rabbi Yochanan ben Nuri, direct attachment is necessary because the blue thread is also a lavan thread. For Rabbi, when it is separate, it need not attach directly to the garment; it need only wind around the attached lavan. The pasuk commands pesil techeiles on the corner's tzitzis, not on the corner itself.³⁴

"Rabbah sat and said in Rav's name: 'The winding thread counts toward the number.' Rav Yosef said: 'Shmuel said that, not Rav'" (39a).

Rav Yosef apparently understands "counts toward the number" as permitting its inclusion without requiring it: It may also be separate. This contradicts Rav's "twist it from within," requiring inclusion rather than a separate thread. Rav Yosef therefore says Rav could not have said it; it is Shmuel's statement.³⁵ Shmuel, allowing either inclusion or a separate thread, follows Rabbi.

Baal HaMaor (Shabbos 12a in the Rif) already proves that Shmuel follows Rabbi, and consequently rules like Rabbi, from 38a-b. That Gemara assumes Shmuel's interpretation of the Mishnah refers to Rabbi and cites it while reconciling the Mishnah with him, although the question to Shmuel does not explicitly mention Rabbi: "Is it unlike Rabbi?... Rami bar Chama said... It was also stated: Levi said to Shmuel: 'Aryoch, do not sit until you explain "Techeiles does not prevent lavan, nor lavan techeiles." What does it mean?' He answered: 'It refers only....'"

We can similarly explain the continuation: "Rava sat and said in Shmuel's name: 'Techeiles wound over most of the fringe is valid.' Rav Yosef said: 'Rav said that, not Shmuel.'"

For Rabbi, whom Shmuel follows, lavan is merely techeiles's base. There is no reason to require a particular fringe form beyond techeiles winding around white threads. The beraisa defining tzitzis as anaf fits the Chachamim and Rabbi Yochanan ben Nuri, not Rabbi. Rabbi needs no loose fringe; even winding all of it, not just most, would be valid. Rav Yosef therefore assigns this statement to Rav, not Shmuel.

In the Rambam's reading, there is thus a three-way Tannaitic dispute. The Chachamim, Sifri, and Rabbah bar Chanah treat lavan and techeiles as independent, equal fulfillments. Rabbi Yochanan ben Nuri and Rav make lavan basic, with blue winding and ornament adding another layer. Rabbi and Shmuel make blue winding primary, served by lavan as its base. We will now explain the halachic value and character of these fulfillments, assuming that the physical relationship among the parts reflects the character of their fulfillment.

The pesukim describe tzitzis as leading to remembrance of mitzvos. Two beraisos in Rabbi Meir's name explain how tzitzis and techeiles recall malchus Shamayim:

"Rabbi Meir used to say: Why is techeiles different from all other colors? Because techeiles resembles the sea, the sea the sky, and the sky the Kisei HaKavod, as it says, 'Under His feet was like sapphire brickwork, like the very heavens in purity' (Shemos 24:10), and 'Like the appearance of sapphire stone was the likeness of a throne' (Yechezkel 1:26)" (43b; variations in Chullin 9a, Sotah 17a, Sifri Shelach, Bamidbar Rabbah 4:13 and 17:5).

³⁴ Perhaps this is the Zohar's view, Shelach 175a: "It does not say 'place on the corner,' but 'place on the tzitzis,' because it covers the other threads."

³⁵ Compare Sukkah 11a: "Rav Huna said: This is what I meant: Shmuel said it, not Rav, since Rav validates it."

“Rabbi Meir used to say: The punishment for lavan exceeds that for techeiles. A king told one servant to bring a clay seal and another a gold seal. Both failed. The greater punishment is for the one told to bring clay” (43b).

The first sees techeiles as recalling the Kisei HaKavod: Through its color, one encounters the Shechinah. The parallel Sifri says: “One who fulfills tzitzis is credited as though he greeted the Shechinah, for techeiles resembles the sea....” This recalls malchus Shamayim.

The second sees tzitzis as a seal. As explained in Part One, based on Shabbos 58a and Tosafos here, servants wear such seals, and tzitzis testify that Yisrael serve HaKadosh Baruch Hu. They recall His kingship by identifying His servants.

Rashi and Rambam (2:9) explain clay versus gold through techeiles’s relative rarity. But there is clearly another layer: Lavan’s appearance identifies servitude alone, without indicating the Master is Hashem; the observer supplies that information. The five-knot custom apparently addresses this lack, as explained later. Techeiles’s splendor identifies an exalted master, like a gold seal marking the king’s servant rather than an ordinary person’s.

Under the second beraisa, lavan clearly has meaning without techeiles. The primary meaning seems to lie in attaching and wearing the seal, even without a particular appearance. The seal’s being gold adds another layer, identifying service to the king. This fits Rabbi Yochanan ben Nuri exactly: Lavan is basic, and techeiles builds upon it. Lavan’s fulfillment is a clay seal; tzitzis decorated with blue become a gold seal.

Rebbi, making techeiles primary, follows the first beraisa: Techeiles recalls the Kisei HaKavod and thereby malchus Shamayim, as its viewer remembers the Shechinah symbolized by sky and throne. Lavan matters only as techeiles’s base.

The second beraisa fits only Rabbi Yochanan ben Nuri, not Rebbi. The first, however, can fit both. It must: Rav and Rambam rule like Rabbi Yochanan ben Nuri, and it is difficult to say such a widely cited teaching in Shas and Chazal is against the halachah.

For Rebbi, the first defines the primary fulfillment. For Rabbi Yochanan ben Nuri, lavan is a clay seal identifying servitude without naming the Master. Techeiles identifies service specifically to Hashem in two ways. Its splendor marks the wearer as the King’s servant; its sky-like shade identifies which King—the One seated on the Kisei HaKavod. It resembles a servant bringing a gold seal engraved with the king’s name.

The wording “Why is techeiles different from all other colors?” supports this. It assumes the need for color generally and explains the choice of blue. Color’s splendor marks the King’s servant; Rabbi Meir adds that blue identifies the King of the world seated on the Kisei HaKavod. For Rebbi, other colors have no meaning here at all. Rabbi Meir, author of both beraisos, follows Rabbi Yochanan ben Nuri.

For the Chachamim, lavan and techeiles are independent. Lavan is certainly a clay seal, but independent techeiles cannot be a gold seal: If blue alone already gives a gold seal, why also need clay? Their techeiles fulfillment must instead be remembrance of the Kisei HaKavod, as in the first beraisa.³⁶

³⁶ In Sefer HaMitzvos, shoreish 11, the Rambam counts lavan and techeiles as one mitzvah despite their non-indispensability because they have “one purpose,” one fulfillment. This may apply only to Rabbi Yochanan ben Nuri and Rebbi; the Chachamim would have two mitzvos, as the Ri in Tosafos 38b, s.v. Ella, and Rosh, siman 7, imply. The Rambam could therefore agree with the Ri that remnants of kinds apply to Rebbi, not the Chachamim. He rules like Rabbi Yochanan ben Nuri, hence permits remnants of lavan but not techeiles.

We said Rabbi Yochanan ben Nuri and Rebbi both understand techeiles as winding. For the former, lavan fulfills the clay seal, and blue decoration produces the gold seal together with it. For Rebbi, lavan has no independent fulfillment and serves only as the base for primary techeiles.

Perhaps Rebbi's lavan extends the garment so techeiles can wind around it. Techeiles symbolizes the Shechinah resting on its wearer and must therefore clothe the garment, accomplished by winding around a gedil emerging from it. Alternatively, lavan makes techeiles visible against it. On the latter explanation, Shmuel's requirement to put lavan first lechatchilah, though failure does not invalidate, could mean attaching lavan to the garment and winding techeiles around it. Bedieved, one may attach techeiles and wind lavan around it. The essential point is two kinds wound together and somehow attached to the garment.

Tzitzis and bigdei kehunah have several parallels: Both contain pesil techeiles, and both permit shaatnez. Menachos 43a even considers exempting kohanim from tzitzis because they have another shaatnez permission. Its rejection still accepts that reasoning during actual avodah in the Mikdash. Techeiles therefore clearly has a role parallel to bigdei kehunah; tzitzis are a kind of priestly garment outside the Mikdash. What does that mean?

If tzitzis are a badge of servitude, bigdei kehunah are likewise "service garments for ministering in holiness" (Shemos 39:1), identifying the kohanim as Hashem's closer servants. Tzitzis are a servant's badge; bigdei kehunah are the uniforms of the King's intimate attendants.

If techeiles recalls the Kisei HaKavod, bigdei kehunah are "holy garments" marking the kohen's greater holiness, arising from greater proximity to the Shechinah.

"So that you remember and perform all My mitzvos and be holy to your G-d": The concluding holiness may continue the immediately preceding phrase, deriving from "all My mitzvos," which tzitzis lead to; or it may refer to the parshah as a whole, with holiness connected to tzitzis.

If tzitzis fulfill a badge of servitude, holiness has no obvious direct connection to them. If their fulfillment is greeting the Shechinah, perhaps tzitzis sanctify the person: Placing techeiles on his garment displays Hashem's glory upon him, brings the Shechinah to rest upon him, and thereby sanctifies him.³⁷

The Sifri, paragraph 115, disputes this between Rebbi and its anonymous opinion; Rebbi indeed connects holiness directly to tzitzis: "'You shall be holy to your G-d'—the holiness of all mitzvos.... The subject is the holiness of all mitzvos. Rebbi says: The holiness of tzitzis.... This teaches that tzitzis add holiness to Yisrael."

Part Three: Defining Techeiles and Restoring Its Use

A. The Need for a Chilazon B. Identifying the Chilazon C. The Shade and Lightness of Techeiles D. The Possibility and Obligation of Restoring Techeiles

A. The Need for a Chilazon

"Abaye asked Rav Shmuel bar Rav Yehudah: 'How do you dye this techeiles?' He answered: 'We bring the chilazon's blood...'" (42b). A beraisa likewise says: "This chilazon... with its blood they dye techeiles" (44b).

The beraisa and Gemara explicitly describe using a chilazon. Is that an indispensable din? The correct shade certainly does not suffice: Kala ilan, a dye resembling techeiles (Bava Metziah 61b; Menachos 40a; elsewhere), is invalid. But perhaps another din invalidates kala ilan, rather than a specific chilazon requirement. The Tosefta

³⁷ See the beraisa in Maseches Tzitzis and Ramban's discussion in Toras HaAdam, Rav Isser Zalman Meltzer edition 25a, Chavel edition p. 100, concerning a Tannaitic view that the tzitzis cheftza itself has kedushah.

states: “Techeiles is valid only from the chilazon; from another source it is invalid. Scarlet comes from the mountain worm; from another source it is invalid” (Menachos 9:6).

The plain meaning is an independent, indispensable chilazon requirement, apparently for all techeiles dyeing. However, because the concluding scarlet din concerns bigdei kehunah, this might be a local rule for priestly garments, leaving the tzitzis requirement dependent on another factor.

“Rav Yitzchak son of Rav Yehudah would test it: He brought magbaya gila, fenugreek water, and forty-day-old urine, and soaked it from evening until morning. If its appearance deteriorated, it was invalid [kala ilan]; if not, valid” (42b-43a).

This suggests validity depends on durability, with kala ilan invalid because it fails that requirement. There are two possibilities. First, techeiles must come from the chilazon; that source gives exceptionally durable color unobtainable elsewhere, so durability identifies its origin. Or, second, no particular source is intrinsically required, only durability, and the test directly defines validity. Chilazon dye happens to meet the standard, unlike kala ilan. A blue dye from another source, equally durable, would be invalid under the first approach and valid under the second.

Rashi requires a chilazon in principle for both bigdei kehunah (Shemos 25:4; Bamidbar 15:38) and tzitzis (42b, s.v. Mishum); Tosafos there, s.v. VeSamemanim, agree. Sefer Yereim, siman 401, seems not to require it intrinsically: He derives its use logically from producing a shade recalling the Kisei HaKavod, unless he means only to explain the reason for a Torah din.

The Rambam writes: “Techeiles for tzitzis must be dyed by a particular known dyeing that retains its beauty and does not change. Anything not dyed that way is invalid for tzitzis, though sky-colored.... How is tzitzis techeiles dyed?... One then brings the chilazon’s blood...” (2:1-2).

Tiferes Yisrael, introduction to Seder Moed, rules of the kohanim’s holy garments, infers that the Rambam fundamentally requires durability, not a chilazon. The chilazon is therefore named only in halachah 2’s practical procedure, not halachah 1’s basic definition. This reading has several difficulties.

A. We cannot assign the Tosefta to bigdei kehunah according to the Rambam, since Hilchos Klei HaMikdash 8:13 requires neither chilazon nor durability. Hilchos Tzitzis likewise states: “Techeiles throughout the Torah is wool dyed like the blended shade of kohl, the appearance of a clear sky. Techeiles for tzitzis must be dyed by a particular known dyeing...” (2:1). Even durability is specific to tzitzis; bigdei kehunah require only the proper shade.

Mishneh LaMelech on Klei HaMikdash 8:13 says the Rambam requires a chilazon for bigdei kehunah too, relying on Hilchos Tzitzis. But the distinction is apparent even within Hilchos Tzitzis itself. For the Rambam, the Tosefta must therefore concern tzitzis. It is difficult to suppose that the Tosefta merely gives a practical application of durability rather than specifically requiring a chilazon. A durability-only reading of the Rambam would therefore conflict with it.

B. “A particular known dyeing, which retains its beauty and does not change,” means a specified dyeing, excluding others. “Known” cannot describe the shade, since something dyed otherwise can still be sky-colored. Nor can it describe durability, which is stated separately. It must mean a particular dye: Chilazon dye, specified in halachah 2.

C. The Rambam writes: “If tested and found to have been dyed with another darkening color that is not durable, it is invalid” (2:4). The tests identify the dye’s origin rather than making durability itself the din. Otherwise, he need only say: “If tested and found not durable, it is invalid.”

The Rambam therefore clearly requires specifically a chilazon. In his view, the underlying value of that din is durability, explaining why he names the chilazon only in the procedure. Nevertheless, the actual halachic requirement is a chilazon, so synthetic color passing the tests would remain invalid. The din has a defined “act”—particular chilazon dyeing—and its fundamental halachic fulfillment is “retaining its beauty.” He places durability within *noy*, beauty, a recognized element of *techeiles*.³⁸

The Rambam limits durability and chilazon to *tzitzis*, excluding *bigdei kehunah*, despite the Gemara comparing them (42b). He can do so because chilazon is a particular din invalidating *techeiles* from another source.

A particular din can be limited to a defined halachic setting: Its innovation extends no further, and a chilazon need not be required for *bigdei kehunah*. Rashi, who requires it there too, can be understood in either of two ways. He may fundamentally disagree: Chilazon is not a particular requirement invalidating otherwise-defined *techeiles*, but part of the formal definition of the *cheftza*. Blue from another source is not invalid *techeiles*; it is not *techeiles* at all. Wherever the Torah says *techeiles*, it means blue wool dyed with chilazon color.

Alternatively, Rashi agrees that chilazon is a particular din within *noy*, but holds that *bigdei kehunah* too require splendor, so chilazon dye is required there as well.³⁹

B. Identifying the Chilazon⁴⁰

Techeiles existed in Bavel through at least Rav Achai’s generation (43a), and the Gemara says nothing about its disappearance. She’iltos of Rav Achai Gaon, Shelach 127, generally omits *techeiles*, and Bamidbar Rabbah, Shelach 17:5, says: “Now we have only *lavan*, for *techeiles* was hidden away.” Bamidbar Rabbah reached final editing in the Geonic era. *Techeiles* in Bavel therefore clearly ceased during the Savoraim or early Geonim.

Menachos 42b suggests the Babylonian Amoraim did not know the dyeing method. Apparently, they imported *techeiles* from Eretz Yisrael, where the chilazon lived in the Mediterranean. Production plausibly ceased with the Arab conquest of Eretz Yisrael in the seventh century.

In 5647/1887, Rav Gershon Chanoch Leiner, the Radzyner Rebbe, announced his intention to search for the lost chilazon. After research, he identified it as the cuttlefish *Sepia officinalis*, which emits black ink. Turning the ink into blue suitable for wool was difficult, but he eventually announced success. His chassidim began wearing its *techeiles*, and this dye is still produced in Eretz Yisrael.⁴¹

In 5673/1913, Rav Herzog researched *techeiles* for his doctorate and sent separate samples of Radzyn *techeiles* to chemists in Germany, France, and England. They identified the color as Prussian blue, a known inorganic dye. Colorless substances added during processing had combined to create the final dye. Nitrogen, obtainable from organic matter, is needed, but any other animal could supply it equally well; when Prussian blue was invented in 1704, ox blood was used.

³⁸ Compare Rambam 1:8 on one-third and two-thirds, based on Menachos 39a, with 1:9; also Nimukei Yosef 12b in the Rif, s.v. *VeNoyei Techeiles*. This differs from Rashi 39a, s.v. *VeNoyei Techeiles*.

³⁹ My rebbi, Rav Aharon Lichtenstein shlita, pointed out that other *dinim* alongside chilazon in the Tosefta concern sources of objects as particular requirements in defined halachic settings, rather than formal definitions of those objects.

⁴⁰ Further discussion appears in Rav Eliyahu Tavger’s article at the end of *Kelil Techeiles*, Jerusalem 5753/1993; Dr. Israel Zideman’s article in *Techumin*, volume 9; Rav Menachem Burstein’s *HaTecheiles*, Jerusalem 5748/1988, including Rav Herzog’s writings at its end; and Rav Herzog’s doctoral thesis, published by Keter with additional articles as *The Royal Purple and the Biblical Blue*. I must note that all information in this section comes from others’ writings; I have conducted no scientific research myself.

⁴¹ The Radzyner’s three books on *techeiles* were recently republished as *Sifrei HaTecheiles—Radzyn*, Bnei Brak 5759/1999.

Tosafos (42b, s.v. VeSamemanim) do require ingredients beyond the chilazon extract, perhaps critical to forming the dye, unlike Rashi and Rambam, who need them only for accompanying dyeing processes. But it is wholly implausible that only the added ingredients are critical, while the chilazon extract is irrelevant. The Radzyner's identification was therefore rejected.

Rav Herzog proposed the violet snail, *Janthina janthina*. There is no historical or archaeological evidence of its use for dyeing. He considered it the best match for "its body resembles the sea," since its shell is light purple, near blue. It secretes a blue-purple substance, but this has not successfully served as a dye; researchers say its chemical structure is unsuitable for textiles such as wool.

Aristotle and Pliny describe a snail family called porphyra, used for dyeing and identified with what is now called the murex family. The parallels with Chazal's chilazon and its dye include the following.

Josephus and Philo mention snail-derived argaman for the Mikdash. Pliny describes porphyra producing shades from red to blue, and ancient wool fleeces dyed with murex in those shades have been found. Ancient dye works near Tyre and Sidon—the techeiles industry's region, according to Shabbos 26a, "from the Ladder of Tyre to Haifa," Sifri VeZos HaBerachah, end of paragraph 354, and Megillah 6a's promise to Zevulun—contain piles of these shells broken near the dye gland. Tyre and Haifa were ancient commercial centers of murex dyeing, giving rise to "Tyrian purple."

Garments dyed from these snails were prestigious royal clothing, like techeiles (Yechezkel 23:6; Esther 8:15; Bereishis Rabbah 85:9; Ramban on Shemos 28:2). Aristotle describes dyers extracting color while the snail lived because death releases it; this is observable in murex. An enzyme needed to form the dye also decomposes quickly after death. This matches Shabbos 75a: "The longer it remains alive, the better for him, so that its dye remains clear."

Anyone denying murex as the techeiles chilazon must assume that two known ancient snails produced the same colors, with dyeing industries in the same region, highly prized wool from both, and both extracted alive. One has abundant historical and archaeological evidence yet is invalid for tzitzis; the valid one left no historical record beyond Chazal and no archaeological evidence.

This is especially difficult because Chazal consistently call the techeiles source simply chilazon, without qualification, implying one known dye-producing snail.

Further evidence comes from kala ilan, always described as visually indistinguishable from techeiles without testing. It is universally identified as plant indigo; see section C II below. Blue murex dye has the same molecular structure and therefore appearance as indigo. Even if murex were not the chilazon, its blue would resemble techeiles, since it resembles indigo and indigo resembles tzitzis techeiles. Why, wherever kala ilan is mentioned as a misleading invalid substitute, is murex blue not mentioned too?

The Raavyah (Berachos 9b, siman 25) writes: "We read in the Yerushalmi: Between techeiles and karti, between porphyrin and parifinin...." This passage is absent from our printed Yerushalmi; perhaps he means an Eretz Yisrael Midrash. His text nevertheless explicitly equates techeiles's shade with murex color, strengthening the preceding proof, and its simple wording suggests identity of substance itself.

Three Mediterranean murex species are candidates:

1. The blunt-spined murex, *Trunculariopsis trunculus*, also called rock murex.
2. The sharp-spined murex, *Murex brandaris*.
3. The red-mouthed rock shell, *Thais haemastoma*.

The main dye in the latter two is dibromoindigotin: An indigo molecule with two bromine atoms. Exposing the hypobranchial gland containing the dye to sunlight produces intense red-purple. The blunt-spined species also contains blue indigo, giving a milder purple mixture. To obtain pure blue from all three, bromine must be separated from dibromoindigotin, leaving pure indigo. This is easier with the blunt-spined murex, which already contains some indigo. At Tyre's dye works, sharp-spined and red-mouthed shells were mixed, while blunt-spined shells were piled separately. Apparently, the former produced redder purple shades and the latter blue. The kala-ilan resemblance proof applies chiefly to the blunt-spined species. If only one is valid, it must be that one.

Nevertheless, all seem valid, since they form one general snail kind, and the argument from Chazal's unqualified chilazon applies collectively. If chilazon is part of the cheftza's definition, whether specifically the blunt-spined species is necessary remains open. If it is a particular din grounded in durability, as the Rambam understands, all plausibly qualify.

Rav Herzog assembled the evidence for the blunt-spined murex and assumed that identification through most of his thesis, but finally rejected it in favor of *Janthina* for three reasons. His main objection was that its shell is white and brown, unlike "its body resembles the sea." What he did not know is that marine organisms and plants encrust its shell in its natural habitat, just as they cover nearby rocks, making it resemble its surroundings in each environment. "Its body resembles the sea" thus means resemblance to the seabed; *yam* often denotes the seabed specifically, as in *Yeshayahu* 11:9 and *Chavakuk* 2:14.⁴²

Rav Herzog's second difficulty was that the blunt-spined murex produced purple rather than blue. Many researchers certain of its identity therefore thought *techeiles* was purple. Since Chazal generally compare *techeiles* to sky and sea, he rejected purple, giving another reason to reject the snail.

About twenty years ago, the solution was found: When the dye in its reduced state—the chemically unstable state used to bind it to wool—is exposed to sunlight, ultraviolet rays separate bromine from the molecule, leaving pure blue indigo. This difficulty too was resolved.

His final, least serious difficulty was "comes up one in seventy years." Such numbers usually express exaggeration—for example, the carob is said to bear fruit after seventy years—and *Maseches Tzitzis* has a variant, "seven years." He explained *Janthina* through increased reproduction every four or five years. But the statement need not describe a fixed biological feature at all. It plausibly means a single snail turns up in fishing nets, reaches the surface, or washes ashore only rarely: "Seventy years," once in a lifetime. It says nothing about their seabed population or mass emergence on shore.⁴³

⁴² This explains the *beraisa* at 44a: "The chilazon's body resembles the sea, its nature resembles a fish, it comes up one in seventy years, and with its blood they dye *techeiles*; therefore it is expensive." These are poor identification signs: More is obscure than explicit, and clearer signs could have been given. The *beraisa* apparently does not identify it for someone unfamiliar, but lists reasons *techeiles* is costly. "Therefore it is expensive" refers to the entire description.

"Resembles the sea" means camouflage makes it difficult to distinguish and catch. "Its nature resembles a fish": Rashi, in the *Shitah Mekubetzes's* *girsa*, understands its shape. But *Mikvaos* 6:7 says: "Rabban Shimon ben Gamliel says everything belonging to the water's creatures is *tahor*." The Rambam's commentary understands things created from water; Aruch, entry *Bar* 6, explains "fish and similar things." For the Aruch, *beriah* can mean a natural environment or general animal category, here aquatic animals. Our phrase can similarly mean the snail lives in water like a fish, another obstacle to capture and reason for cost.

The later clauses' relationship to cost is clear. Cost may matter because the chilazon is a promised livelihood for *Zevulun* and the *tzaddikim* (*Sifri* *VeZos HaBerachah*, end of 354; *Megillah* 6a), or because the dye's prestige matters when *techeiles* identifies its wearer as the King's servant.

⁴³ This permits retaining our *girsa* *echad*, "one," rather than Rashi's *achas*, "once."

To conclude: The Radzyner's and Rav Herzog's identifications have no positive foundation. Their main support is negative: The Gemara's signs do not disprove them and can be reconciled with them, though even that is not entirely straightforward. Moreover, both proposed species' secretions proved unsuitable for dyeing wool. Murex has abundant archaeological, historical, and other evidence, some of which is nearly unanswerable. In practice, every sign available points to this identification of the chilazon.

C. The Shade and Lightness of Techeiles

We will first discuss hue and seek to prove that techeiles is blue, without a green or purple component. Later we will ask whether it is light like the daytime sky or dark like the sea. For now, the issue is hue, not lightness.

Chazal generally compare techeiles to sky and sea: "Rabbi Meir used to say: Why is techeiles different from all colors? Because it resembles the sea, the sea the sky, and the sky the Kisei HaKavod..." (43b; similarly Chullin 89a, Sotah 17a, Sifri Shelach, Bamidbar Rabbah 4:13 and 17:5).

"Rabbi Elazar son of Rabbi Shimon says: Why is it called techeiles? Because the Egyptians were destroyed through their firstborn, as it says, 'At midnight Hashem struck every firstborn' [the color recalls midnight]. Alternatively, because the Egyptians were destroyed in the sea [the color recalls the sea]" (Sifri Shelach).

"When Moshe ascended, HaKadosh Baruch Hu opened seven heavens, showed him the heavenly Beis HaMikdash, and four colors for making the Mishkan.... Moshe said: 'Master of the world, I do not know what the four colors look like.' He said: 'Turn right.' Moshe turned and saw angels wearing clothing resembling the sea. He said: 'That is techeiles...'" (Pesikta Rabbasi, Matan Torah, parshah 20).

These sources, especially the Pesikta, leave no doubt that techeiles is blue, light or dark. Josephus, who lived during the Mikdash, Rav Saadiah Gaon, Rav Nachshon Gaon, cited in Itur, Tzitzis, gate 1, Rambam 2:1, and others define it as sky-colored. Rav Herzog (pp. 62-63) cites Samaritan and Karaite traditions likewise identifying its appearance with the sky.

The sea-sky-throne teaching also has another version. Bamidbar Rabbah 14:3 states: "Chizkiyah said: Why did G-d command techeiles rather than other colors for tzitzis? Because techeiles resembles grass; grass [in Shocher Tov 90, grass resembles trees] resembles the sea; the sea the sky; the sky the rainbow; the rainbow the cloud; the cloud the throne; and the throne the Divine glory..." (similarly Shocher Tov, end of Psalm 24 and Psalm 90; Yerushalmi Berachos 1:2).

At first, this suggests a green component, perhaps turquoise rather than pure blue. But except in the Yerushalmi, the Midrash also includes a rainbow. If it precisely identifies color, how could it compare techeiles to a multicolored rainbow? Clearly, exact color identification is not intended.

Rav Herzog writes (Pesakim U'Kesavim I, p. 62): "The versions including grass are now readily understandable. The ancients regarded blue and green as one category. The teaching links the world through a chain of related colors: Sea, the earth's covering of grass, sky, and so on. Techeiles awakens thought of them, raising it to the Kisei HaKavod. Rabbi Meir's statement is not intended to identify techeiles's appearance; it is an aggadic, ethical teaching, requiring no halachic precision and not interpreted like a halachic beraisa. The expanded version including trees, rainbow, radiance, and so on is explicitly Chizkiyah's, though some teach it in Rabbi Meir's name. More plausibly, Chizkiyah expanded the great Tanna's teaching."

Rashi apparently had uncertainty. Sotah 17a identifies techeiles with the sea, but Berachos 9b says: "Techeiles is yarok, close to leek color, called poreish," likewise Shemos 25:4 and Bamidbar 15:38. Berachos 57b says: "Techeiles is yarok, and someone with a yarok face is ill." Yarok alone proves nothing; Rashi may include blue

under that term, as Rav Herzog notes, p. 59. The comparisons with leeks and an ill person's face may concern blue and green sharing a category, rather than an actual green component in techeiles.

Rav Herzog suggests another explanation: "Rashi seems sometimes to have pictured techeiles as green-blue.... I am dust beneath the feet of Yisrael's great luminary, but my limited understanding whispers that in these passages he judged by the nearby European seas he knew, which strongly tend toward green. He assumed techeiles primarily resembles the sea. Rabbi Meir, however, meant the Mediterranean, especially Eretz Yisrael's sea, which is exceptionally deep blue...."⁴⁴

Taken together, the sources clearly indicate blue, especially Pesikta Rabbasi, which explicitly seeks to show Moshe the precise shade. We have addressed the few sources mentioning green.

Dr. Israel Ziderman's article in *Techumin* 9 defines techeiles as purple. We will show that it is blue alone, as Rav Herzog held and Rav Eliyahu Tavger also argues in *Kelil Techeiles*, Jerusalem 5753/1993.

Torah shebe'al peh contains no mention of purple here. Dr. Ziderman's main proofs are external or indirect, addressed below. Chazal, Geonim, and Rishonim indicate blue. Archaeology adds another proof, cited in *Kelil Techeiles*, p. 334: A synagogue at Dura-Europos in Syria, from the Amoraic period when techeiles was still used, has biblical wall paintings. Aharon's techeiles robe is blue, confirmed chemically without concern that purple faded.

We now address the proofs for purple.

I. Dr. Ziderman writes (p. 426): "No snail produces blue without a reddish tendency creating purple/argaman." The blunt-spined murex contains indigo, identical to plant indigo, and dibromoindigotin, an indigo molecule with two bromine atoms. The first alone gives pure blue; the reddish second component makes the mixture purple. Failure to produce pure blue was one reason Rav Herzog, certain techeiles is blue, rejected this identification (*HaTecheiles*, p. 422; his thesis). But the solution is known: Exposing reduced dye—the chemically unstable state used to bind to wool—to sunlight lets ultraviolet rays remove bromine, leaving pure blue indigo.

II. Chazal repeatedly describe kala ilan as visually identical to techeiles but invalid. It is identified as indigo: Aruch, entry Kala Ilan, "indikō"; Rav Amram Gaon's responsum, *Geonica* II, p. 333, "Kala ilan is lilag, in Arabic nil," indigo; Tosefta Avodah Zarah 7:1, Zuckerman text, "Kala ilan crushed with asheirah wood..." matching preparation by crushing leaves soaked in water. Plant indigo produces blue identical to murex blue.

Sifri Shelach says: "'I am Hashem your G-d'—why mention Yetzias Mitzrayim here? So one should not say, 'I use other dyes and kala ilan resembling techeiles, and who will expose me?' I am Hashem your G-d...." Dr. Ziderman (p. 435) reads other dyes as added to kala ilan, implying red ingredients must turn its blue purple. But the straightforward reading is other dyes or kala ilan, not both together. Elsewhere, kala ilan appears alone (*Bava Metzia* 61b; *Menachos* 41b; others). His proposal that all those later sources mistakenly omitted "other dyes" is visibly strained. Resemblance to kala ilan therefore supports blue, not purple.

III. *Menachos* 42b-43a describes chemical tests distinguishing techeiles from kala ilan. Dr. Ziderman (p. 436) argues their chemical structures must differ; once chilazon is identified as murex, some red component must remain, since pure blue indigo is structurally identical to kala ilan.

This is a real question, but even unanswered it cannot overturn all the preceding evidence. Two answers are possible. A. Besides the dye itself, chilazon material has animal byproducts and kala ilan has plant byproducts; the tests may distinguish those. B. *Menachos* 42b states: "Techeiles cannot be tested and may be bought only

⁴⁴ In his doctoral thesis, Rav Herzog cites research measuring the blueness of different seas. Its results identified the eastern Mediterranean basin as the world's bluest sea.

from an expert.” This could mean genuine indigo substitutes cannot be distinguished, exactly matching chemical identity. The Gemara objects from Rav Yitzchak’s test and concludes (43a) that untestability concerns dyeing lishmah, according to Rambam and Rashi’s first version.

Perhaps Tannaitic Eretz Yisrael used indigo as counterfeit, while Amoraic Bavel used other, less durable substances borrowedly called kala ilan. The Gemara may preserve the beraisa’s plain meaning while saying its practical rule still applies because lishmah cannot be tested. In actual experiments, both blunt-spined-murex techeiles and plant indigo passed the tests, though the testing method may have been mistaken because the Gemara’s procedure is not entirely clear.

IV. On p. 435, wool dyed with plant indigo mixed with red kermes, found in a Bar Kochba cave, is cited. Yigael Yadin identified it as counterfeit tzitzis techeiles, implying a blue-red mixture. But there is no actual proof for that identification, and the wool’s appearance does not resemble tzitzis at all.

V. On p. 432, the Septuagint’s hyakinthinon, also used by Philo and Josephus, is understood as purple murex-dyed wool. But its precise shade is difficult to establish. It may identify the dye type rather than the exact resulting color; archaeological evidence clearly shows ancient murex producing both purple and blue.

VI. Rambam 2:1 defines techeiles as wool dyed “like the blended shade in kohl,” which is the correct text. Dr. Ziderman (p. 435) infers blue mixed with another color. But the continuation, correctly read, says: “The appearance of the sky visible in the sky’s clarity.” This means the daytime sky. The blend is blue with white: Light blue. Compare Rav Avraham ben HaRambam on Shemos 25:4: “Techeiles—wool dyed like the sky’s appearance, pure blue, [a middle shade] between deep blue and white.”

VII. Rashi on Bamidbar 15:41 cites Rabbi Moshe HaDarshan: “Pesil techeiles recalls the destruction of the firstborn.... Their blow occurred at night, and techeiles likewise resembles the sky darkening toward evening.” Dr. Ziderman (p. 435) infers sunset purple. Clearly, however, the reference is nighttime, when makkas bechoros occurred: Very dark blue.

The Lightness of Techeiles

Is techeiles light like the sky or dark like the sea? Rabbi Meir’s beraisa compares it to sea, sky, and Kisei HaKavod, citing “sapphire brickwork... the very heavens in purity” and “sapphire stone... the likeness of a throne” (43b).

The teaching’s conceptual focus is the sky as symbol of the Kisei HaKavod; only that receives supporting pesukim. Why mention the sea too? Several explanations are possible.

Rashi in Sotah 17a says: “All these stages are needed because the pesukim describe only the sky’s resemblance to the throne. Techeiles resembles the sea, which resembles the sky; techeiles does not resemble the sky as closely, but resembles something resembling it.” For Rashi, the more precise resemblance is to the sea, explaining its inclusion.

Rashi at 43b, following Sifri Shelach, instead says: “Resembles the sea—in which miracles were performed for Yisrael.” The sea thus also carries a conceptual reminder, leaving exact color resemblance undetermined.

Rav Herzog offers a third explanation (Pesakim U’Kesavim, p. 62): “Perhaps the teaching connects the lower world, earth, to the upper world, heaven, through color. The sea originally covered all earth and still covers

most of it; it and the sky share an appearance resembling the prophets' vision of the throne. It gradually raises thought toward the Kisei HaKavod."⁴⁵ This too does not determine which resemblance is closer.

The Rambam says: "Techeiles throughout the Torah is wool dyed like the blended shade in kohl, the appearance of the clear sky" (2:1, correct text). He therefore has light daytime sky-blue, unlike Rashi in Sotah's darker sea-blue.

Concerning the Aron's covering during the Mishkan's travels, Bamidbar Rabbah 4:13 says: "The techeiles cloth was therefore uppermost, facing the sky which resembles it." Rav Saadiah and Rav Nachshon Gaon, cited in Itur, Tzitzis, gate 1, likewise define sky color. The Rambam thus rests on Midrash and Geonic tradition. Similarly, Samaritan and Karaite traditions describe sky color. Yet for all except the Rambam himself, the sky may be emphasized conceptually, with precise resemblance limited to hue rather than lightness.

Rabbi Elazar ben Rabbi Shimon's Sifri explanation compares techeiles to the midnight destruction of the firstborn, or the Egyptians' destruction at sea. This suggests dark blue, but again the sea might be chosen for its message, with exact resemblance only in hue.

Pesikta Rabbasi's account of Moshe being shown angels dressed like the sea, however, apparently gives no conceptual message; it identifies the color. This strongly supports dark techeiles.

If lightness is required specifically like the sky, it follows the Kisei HaKavod idea. If darkness follows conceptual comparisons with midnight or the sea, the sources actually dispute preferred lightness. We would favor light blue because the Gemara's main comparison is the sky.

But darkness may have an entirely different basis: Intensely dyeing wool with techeiles's full strength may belong to noy, just as the Rambam's durability requirement preserves beauty (2:1). Compare kelil techeiles, which one Tannaitic view uses to invalidate "second appearance," reusing a dye bath (42b). The Raavad on Toras Kohanim, Metzora, parshah 1, item 14, explains that it lacks the dye's strongest power. On this explanation, darkness does not contradict the main conceptual comparison with the sky.

Logically, lightness or darkness seems not indispensable: There is no sharp, exact dividing line. The Raavad also supports this. Even the Tanna requiring strong dye invalidates only making done in a way that cannot give full strength, a reused bath. Ordinary weak dyeing in a fresh bath apparently remains valid. Other explanations of the reused-bath din, Rashi and Tosafos there, also somewhat support this: Even the stringent view does not invalidate simply for lacking full intensity. The proof is not conclusive, since they could discuss a dark result obtained by adding dye or reducing wool.

Lightness or darkness may be a din, from resemblance to sky or sea or from noy, rather than the formal definition of techeiles's cheftza. It could then be dispensable bedieved while a particular direction remains preferred lechatchilah.

D. The Possibility and Obligation of Restoring Techeiles

Bamidbar Rabbah, Shelach 17:5, says: "Now we have only lavan, for techeiles was hidden away." This cannot mean the chilazon became extinct: Sifri, VeZos HaBerachah 354, uses that expression about its rarity and difficulty as a livelihood, clearly while it still existed.

⁴⁵ Rav Yosef Dov Soloveitchik is similarly quoted: "The meaning of pesil techeiles in tzitzis was to awaken thought of distant horizons, infinity, and the mysterious connection between the blue sea and light-blue heavens" (Perakim BeMachsheves HaRav, p. 108).

The Rambam writes in his Mishnah commentary, Menachos 4:1, Kapach translation: “It is not available to us today because we do not know its dyeing.” Radbaz, responsum 685, writes: “Perhaps it is still found today, but is not recognized or we do not know how to catch it....” The chilazon may therefore exist; the missing element is identification.

Shiurim LeZecher Abba Mari z”l I, p. 228, discusses practical tradition’s authority and reports in Beis HaLevi’s name that logical proofs cannot identify techeiles; a mesorah is specifically required. No proofs are given for this approach generally or its application to techeiles.⁴⁶ Besides lacking a source, it is difficult to impose a formal knowledge standard for something harmless even if mistaken: Menachos 40a explicitly validates kala ilan as lavan.

There seems to be a widespread impression that techeiles is only a hiddur mitzvah. Clearly, that is incorrect: The Torah commands it, making it a Torah obligation. We can nevertheless ask whether its chiyuv differs from lavan’s, and whether wearing four corners with lavan alone constitutes neglecting an aseh like wearing four corners without any tzitzis.

“Techeiles does not prevent lavan” (38a) gives no basis to reduce the obligation’s severity. It merely says lavan is not invalid without techeiles, just as the hand-tefillin do not prevent the head-tefillin: Lacking the former still leaves the latter obligatory without diminishing the former’s obligation.

Why, then, were four-cornered garments worn for many years without techeiles? If it is fully obligatory, is that like wearing no tzitzis? Two answers are possible.

I. Ones, inability. The Ri (Mordechai, Hilchos Ketanos, siman 944) holds that wearing four corners without tzitzis is not itself formally bittul aseh. Neglect occurs when a person can fulfill the duty but does not. He therefore permits wearing four corners without tzitzis on Shabbos because one cannot attach them then. Similarly, one may wear without techeiles because it is unavailable. Shaagas Aryeh, end of siman 32, says so. On this explanation, once techeiles can be attached, failing to do so is actual bittul aseh.

II. Techeiles and lavan are one mitzvah. One kind prevents the situation from counting as bittul aseh, though the other obligation remains unfulfilled. Not every unfulfilled duty is bittul aseh; only complete uprooting of the mitzvah qualifies. Even when techeiles is accessible, lavan alone prevents actual bittul aseh, though techeiles remains obligatory min haTorah lechatchilah.

Rav Shlomo of Dreux, in Mordechai there, disputes the Ri and treats wearing without tzitzis as bittul aseh even under ones. He therefore must accept the second answer rather than the first.

The Ri (Tosafos 38b, s.v. Ella; Rosh, siman 7; Mordechai 939) applies remnants of kinds only to Rebbe, who has one mitzvah, not the Chachamim, who have two. One kind cannot help the other. He cannot accept the second answer: If the kinds are disconnected even for gardumin, one certainly cannot prevent initial bittul aseh of the other. He must accept the first, like Shaagas Aryeh. Since that answer relies on his Shabbos permission, his gardumin view itself requires his Shabbos position.

Rabbeinu Tam, applying remnants of kinds even under the Chachamim, may—but need not—accept the second answer.

These answers are really two readings of “techeiles does not prevent lavan.” Under only the first, permission to lack a kind depends entirely on availability, and non-indispensability means only that the absence of one does not invalidate the other. It expresses disconnection between their chiyuvim, precisely the Ri’s description of the

⁴⁶ See also Nefesh HaRav, pp. 52-54 and its notes, and the Radzyner’s Pesil Techeiles, which reports Beis HaLevi’s objection differently.

Chachamim as “two mitzvos.” Under the second, alone or alongside the first, the presence of one positively contributes to permitting absence of the other. Lavan’s presence allows absence of techeiles concerning invalidation, though not its initial obligation. Non-indispensability then expresses connection rather than disconnection.

If we accept Rabbeinu Tam’s practical gardumin ruling but interpret non-indispensability like the Ri as disconnection, then remnants of kinds under the Chachamim do not derive from non-indispensability. Rabbi and the Chachamim differ fundamentally, not merely about whether non-indispensability applies initially or only afterward. The Chachamim’s Mishnah separates the kinds; their gardumin rule is simply a formal requirement of two kinds only at making, not one kind helping the other.

The Rambam, like Rabbeinu Tam, applies gardumin in practice, though only to lavan, not techeiles, as explained in Part Two. He connects the two dinim explicitly: “Techeiles does not prevent lavan, nor lavan techeiles. How? Without techeiles, he makes lavan alone; if he made both, and lavan shortened to the corner while techeiles alone remained, it is valid” (1:4). Techeiles’s non-indispensability applies initially and lavan’s only afterward for other reasons already explained. Their shared basis is the connection between the obligations.

Since he applies remnants of kinds even under the Chachamim and bases it on non-indispensability, he accepts the second answer, like Rav Shlomo of Dreux. Rambam 3:10 indeed defines wearing without tzitzis as bittul aseh without conditioning it on availability, implying rejection of the first answer and acceptance only of the second.

Counting techeiles and lavan as one of the 613 mitzvos is therefore no mere technical classification. He disagrees with the Ri’s “two mitzvos” concerning their relationship, and holds that they function together as one mitzvah; only uprooting both constitutes complete bittul aseh.

All this concerns active negation of the mitzvah. Regarding the initial Torah obligation, Rambam 1:3 defines one mitzvah containing two commands, two duties. For many years we were unable to fulfill it. Now that the chilazon’s identification is clear, there is no doubt that its fulfillment must be restored.

In 5748/1988, Rav Eliyahu Tavger in Jerusalem dyed blunt-spined murex for tzitzis, for the first time in more than 1,300 years. He and several others began wearing techeiles. In 5754/1994, larger-scale sales began, and many people now merit fulfilling this important mitzvah.

Part Four: Windings and Knots in Tzitzis with Techeiles

This part has two sections. The first examines the sugyos, dinim, and Rishonim’s approaches, seeking not only practical rulings but especially their guiding considerations and underlying disputes. Each halachic component is considered separately. The second combines them into each complete practical method, followed by instructions for particular tying techniques.

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A. Analysis

Windings

1. The Number of Windings

“Rav Chiya son of Rav Nassan taught: Rav Huna said in Rav Sheshes’s name, in Rav Yirmiyah bar Abba’s name, in Rav’s name: Even one chulyah suffices.... Rebbi says a chulyah consists of winding once, twice, and three times [three turns of the winding thread]. One who uses fewer must not go below seven, corresponding to the seven heavens; one who adds must not exceed thirteen, corresponding to seven heavens and six spaces between them” (39a).

Rashi, s.v. Shishah Avirim, and Tosafos, s.v. Lo Yifchos, explain that the count matches the heavens because techeiles resembles the sky, symbolizing the Kisei HaKavod (43b). The count adds another resemblance to the sky.

What do seven and thirteen count? Most Rishonim understand chulyos,⁴⁷ each with Rebbi’s three windings. The Raavad, gloss to 1:7 and Temim De’im 39, citing Rav Natronai Gaon, counts windings per chulyah, as do Nimukei Yosef 12b in the Rif and Tosafos 39a citing yesh mefarshim.

They explain the three-winding measure in two ways. The Raavad counts only blue windings: Seven total alternating windings include three blue; thirteen include six blue. Nimukei Yosef understands three as the Torah minimum for a single chulyah, “even one chulyah suffices,” while the rabbinic initial standard is seven or thirteen windings per chulyah. Those counting chulyos have three windings in each, the beraisa’s plain meaning. For those counting windings, the Gemara does not give a chulyah count. Apparently, no independent count exists: Five knots are required, as discussed below, and determine the chulyos. Nimukei Yosef and Tosafos’s yesh mefarshim have four; Raavad has three, between knots one and two, three and four, and four and five. Between two and three, he simply winds without a chulyah.

“Not fewer than... not more than...” does not permit intermediate numbers, but specifically these two alternatives, as Pesachim 103b-104a proves; see Tosafos, s.v. U’Mar.

2. The Color of the Windings

“When beginning, begin with lavan: ‘The corner,’ material like the corner. When ending, end with lavan: We ascend in holiness and do not descend” (39a).

The Gemara specifies the first and last winding or chulyah, but not the middle. This involves the fundamental definition of pesil techeiles. For the Rambam, as explained in Part Two, lavan is the basic tzitzis, and techeiles’s primary role is winding around it. Every winding should therefore be blue absent a specific reason for white. Only one winding at the beginning and one at the end are white; all the others are blue. This is his ruling (1:7;

⁴⁷ Rashi and Tosafos 39a, s.v. Lo Yifchos; Rambam 1:8; Rav Amram Gaon, Geonica II, p. 330; Rav Shmuel bar Chofni Gaon, Sefer Dinei Mitzvas HaTzitzis, in Rav Tavger’s Kelil Techeiles, Jerusalem 5753/1993; Rav Yonasan of Lunel, Hilchos Ketanos, Tzitzis, p. 28; Tur, Orach Chaim 11; Piskei HaRid, Menachos 39a; Zohar Pinchas 228, item 300; Semag, Tzitzis 108; others.

Responsa, Blau 286).⁴⁸ Its guiding consideration is fulfilling the mitzvah's Torah purpose, though only one blue winding is indispensable (1:2).

Other Rishonim define techeiles as another thread or threads parallel to lavan, not as its winding.⁴⁹ Neither kind has preference except for beginning and end. Other winding considerations are therefore less fundamental: Beauty, distinction, and similar concerns.⁵⁰ Rav Amram Gaon, Geonica II, pp. 330-331, and others alternate complete white and blue chulyos.⁵¹ Raavad, citing Rav Natronai Gaon, alternates individual white and blue windings within a chulyah; in Temim De'im 39, he says that without techeiles, spaces should replace its windings.

3. Tzitzis without Techeiles

The Rishonim say that the heavens-and-spaces count depends on techeiles's conceptual resemblance to the sky (43b); without techeiles, the count is unnecessary.⁵² Even for those alternating both colors, the count is a din of techeiles, not tzitzis itself.

The Rambam (1:9; Responsa, Blau 138) records the custom of following the techeiles pattern even without it, though unnecessary in principle. Many Yemenite Jews still do so. Raavad likewise used his own techeiles method with lavan alone (Temim De'im 39). Most Rishonim, however, record other winding customs for lavan alone. Today, apart from Yemenite practice, lavan-only winding generally differs from winding with techeiles.⁵³

4. Noy Techeiles

"Rav Huna said in Rav Sheshes's name, in Rav Yirmiyah bar Abba's name, in Rav's name: The beauty of techeiles is one-third gedil and two-thirds loose fringe" (39a).

Rashi treats techeiles here as a general name for tzitzis. The beauty apparently comes from the general mitzvah requirement of zeh Keli ve'anveihu.⁵⁴ Rambam 1:8-9 and Nimukei Yosef 12b, however, place it primarily in techeiles. The Rambam's requirement of dyeing that "retains its beauty" (2:1) includes beauty in techeiles's definition.

Nimukei Yosef says lavan alone should commemorate techeiles. Rambam says: "Generally, he should aim for one-third winding and two-thirds fringe; some are not particular about this with lavan." For the Rambam, this cannot simply commemorate techeiles: His custom of white chulyos already does so, described as "like winding techeiles," while the one-third rule seems stricter. Two explanations are possible.

⁴⁸ Rav Shmuel bar Chofni Gaon likewise says in Sefer Dinei Mitzvas HaTzitzis: "The longer thread shall be techeiles when available.... The first winding at the beginning of the chulyah must use lavan...." Rashi 39a, s.v. KeSheHu, agrees; the Zohar says "seven blue bundles." Tosafos 39a initially explains a knot per chulyah as making techeiles recognizable, implying all are blue, since alternating white chulyos would distinguish them automatically.

⁴⁹ Raavad 1:7: "Why more blue than white?... This is nothing but a great error." Tosafos 38a, s.v. HaTecheiles: "Since the Torah requires two kinds, it is logical to make them equal"; similarly 41b, first s.v. Beis Shammai; others.

⁵⁰ Practically, making all the chulyos blue like the Rambam therefore seems a stringency favoring the more fundamental consideration.

⁵¹ Tosafos 39a, s.v. Lo Yifchos, seeking a Gemara basis for five knots; Rosh, siman 15; Semag, asech 26, 108b, quoted in Mordechai, end of 939; Itur, Tzitzis, p. 137; Rav Yonasan of Lunel, Hilchos Ketanos, Tzitzis, p. 29.

⁵² Rambam 1:9; Tosafos 39a, s.v. Lo Yifchos; Rosh, siman 15; Tur, Orach Chaim 11; others.

⁵³ Logically, one might provide another sign of the heavens when techeiles is absent, substituting the heavens' count. Almost all Rishonim say otherwise. This could nevertheless explain the Rambam's and Yemenite custom.

⁵⁴ Shabbos 133b: "'This is my G-d and I will beautify Him'—beautify yourself before Him in mitzvot; make... beautiful tzitzis...."

First, one-third gedil with lavan follows general zeh Keli ve'anveihu; with techeiles, it belongs to the mitzvah's particular fulfillment. Second, even without actual techeiles, one should seek partial fulfillment of its ornamental beauty through the lavan cheftza.⁵⁵ If the badge cannot be gold, at least let it be silver rather than clay (43b).

Knots

1. The Upper Knot

"Rabbah said: Learn that the upper knot is min haTorah. If only rabbinic, why did the Torah permit linen in tzitzis [juxtaposing shaatnez and gedilim]? A single insertion is not attachment. Therefore it is min haTorah" (39a).

Two possible functions are attaching threads to the garment and bundling the tzitzis threads. The proof depends on garment attachment. Bundling alone cannot be its function: One could bundle threads first and then insert them together through the garment hole, fulfilling tzitzis without forbidden kilayim. Why would a Torah permission be needed?

Nor can it serve only garment attachment. Sanhedrin 88b says about a fifth tzitzis thread: "If the upper knot is not min haTorah, each stands separately; if it is, the tzitzis are already defective." If only attachment were required, each thread could be tied separately to the garment, with no unified defective bundle. Bundling also cannot be an independent din separate from the upper knot: The Gemara specifically makes the unified defect depend on that knot's Torah status; without it, each stands separately.⁵⁶

Together, the sugyos require both functions. Their shared status apparently is a knot that creates tzitzis, defined as anaf, fringe (42a), and yotzei, emerging (41b): A bundle extending from the garment; see Sifri Shelach 115. This requires bundled threads attached to the garment, created by the upper knot.

Rashi 39a, following Shitah Mekubetzes note 6, and Tosafos give two interpretations of "upper":

1. Near the garment, to attach it.⁵⁷
2. At the wound section's end.⁵⁸ A knot anywhere supplies attachment; since the gedil must also remain secure, a single knot goes at its end.

They therefore dispute what knot location sufficiently attaches. The first requires proximity to the garment. The second requires a knot somewhere in the tzitzis, plus a separate gedil rule of securing the winding. If the gedil remained secure without a knot, or with one failing the formal upper-knot requirements discussed below, the upper knot could be elsewhere, including near the garment. The first view requires it near the garment specifically.

⁵⁵ This explains why the Rambam requires winding to bind the gedil even without techeiles. Its formal obligation is stronger than the one-third rule, though apparently still not indispensable bedieved.

⁵⁶ Rav David, cited in Ran on Sanhedrin 88b, s.v. I Savar Lah, understands gedil as requiring a knot near the garment to bundle threads, distinct from the upper-knot din requiring two knots, near the garment and at the gedil's end, for attachment. As noted, this does not explain why Sanhedrin ties separate versus unified threads to the upper knot. He says: "Although the knot near the garment is min haTorah, each may stand separately, since one knot does not constitute kilayim attachment until two insertions." Why thread-unity should depend on kilayim attachment to the garment remains unclear.

⁵⁷ Also Piskei HaRid, Menachos 39a, and Ran on Sanhedrin 88b, s.v. I Savar Lah.

⁵⁸ Also Rav Amram Gaon, Geonica II, p. 331; Nimukei Yosef 12b in the Rif; Eshkol, p. 205, citing a Geonic responsum and the French sages; Semag, Tzitzis 108.

The Rambam seems to have a third reading. Hilchos Tzitzis does not explicitly mention the upper knot. One might say a knot per chulyah supplies it, but why omit a separately stated Gemara din? Hilchos Kilayim 10:3-4 says:

“...If he tied wool threads to linen threads or braided them, or even placed wool and linen in a sack or basket and bound them, it is kilayim. Even a wool cord tied to a linen cord with a strap between, or folded wool and linen garments tied together, is kilayim: ‘Wool and linen together’—once united, it is prohibited. How do we know all these unions, without actual sewing, are Torah prohibitions? The Torah needed to permit kilayim in tzitzis; the received teaching explains the juxtaposition as that permission. Tzitzis are only tied threads. Such attachment outside a mitzvah is therefore prohibited min haTorah, since the Torah would not exclude something forbidden only rabbinically.”

Perhaps the Rambam gives a further logical deduction from Rabbah, but he normally does not write his reasoning, and why omit “it seems to me”? Apparently, he reads the Gemara as a kilayim statement: “Upper knot” means an outside knot binding wool and linen; “min haTorah” means Torah-level kilayim liability. The Gemara introduces a kilayim din, not a new tzitzis din.⁵⁹ Tzitzis still clearly needs knot attachment to the garment; Rabbah took that for granted rather than proving it.

The Rishonim also dispute knot type by comparison with other fields. The kilayim proof requires a knot constituting prohibited kilayim attachment. Alternatively, one applies formal Torah definitions of knots from Shabbos, tefillin, and elsewhere.⁶⁰ Mordechai, Hilchos Ketanos 940, discusses this extensively.

Practically, there are two questions. Must the knot be double? Rabbeinu Tam says yes;⁶¹ the Ri says no.⁶² Is it tied with the winding thread or all the tzitzis threads? Rabbeinu Chananel uses the winding thread;⁶³ the Mordechai in his rebbi’s name uses all threads.⁶⁴

2. A Knot for Each Chulyah

“Rava said: Learn that each chulyah needs a knot. Otherwise, when the upper knot loosens, all the winding loosens; how could Rabbi Chiya’s sons validate gardumin? Perhaps they speak of one who did tie each chulyah” (38b-39a).

Rava proves the need for knots but does not explain their purpose. Tosafos 39a and Rosh, siman 15, initially explain distinguishing the chulyos. This fits the Rambam’s all-blue chulyos, which need distinction. A knot stabilizes them, making the spaces recognizable; if all threads are tied, the knot itself separates them. But for

⁵⁹ Sanhedrin 88a-b would then mean the added threads create a defect by violating kilayim beyond the Torah-prescribed count, rather than by invalidating tzitzis.

⁶⁰ There are two questions: Must tzitzis have a formally defined knot, or does any bundling and garment-attachment suffice? And do the other contexts’ knot standards define knots generally, or are they local requirements—for example, permanence in Shabbos as a din of meleches machsheves?

⁶¹ Rosh, siman 15; Ramban, Sefer HaMitzvos, beginning of shresh 1, and commentary on Bamidbar 15:39; Semag 108b; Yereim, p. 440; Mordechai 940 citing Rav Elchanan and Rabbeinu Tam; Rosh’s Asiyas Tzitzis at the end of Hilchos Tzitzis.

⁶² Mordechai 940; apparently also Rav Amram Gaon, who adds a lower knot presumably to stabilize the gedil and equates its type with the upper knot. The unspecified wording of Rav Shmuel bar Chofni, Rabbeinu Chananel’s Maaseh Tzitzis in Kelil Techeiles, and the Rambam likewise implies this.

⁶³ Maaseh Tzitzis in Kelil Techeiles: “He ties a knot with the long thread...” Also HaManhig citing Provence and Spanish sages; Rosh, siman 15, citing Rabbeinu Tam; Mordechai 940 citing Rabbeinu Tam and Ri. Mordechai cites Rav Elchanan requiring two threads. Raavad 1:7 also requires a white and a blue thread, perhaps not because two are needed, but because blue must be included. This explains why Temim De’im, discussing lavan alone, does not require two-thread tying.

⁶⁴ Mordechai 940, also citing “some practice”; HaManhig, Tzitzis, p. 643, citing French sages; Rosh, siman 15, “now the custom,” and his Asiyas Tzitzis.

Rav Amram Gaon, and Tosafos and Rosh's later proposal, alternating white chulyos are distinguished by their colors. Why then need a knot per chulyah? One might propose general stabilization or producing five knots.⁶⁵ More plausibly, alternating colors and requiring knots depend on one another. Someone alternating colors does not follow Rava, whose proof was rejected. Rav Amram indeed requires only two knots at the gedil's ends, not one per chulyah. Rava may have been trying to prove precisely that all are blue; the Gemara replies that they might alternate. This interpretation can fit the Rambam too, except that he follows Rava despite rejection of the proof.

This knot apparently needs no formal double-knot or all-thread definition even if the upper knot does. Its requirement is functional, for stability and distinction. If it is really a five-knot din, those definitions determine it, as discussed below.

The Rambam shows that the knot is not an essential part of the chulyah: "He takes one white thread and winds once... takes the blue thread and winds twice... and ties. These three windings are called a chulyah" (1:7). "These three windings" is seemingly unnecessary; "this is called a chulyah" would suffice. He emphasizes that three adjacent distinguishable windings create the chulyah, not their stabilization by a knot.⁶⁶ The knot is merely functionally required to stabilize it.

3. Five Knots

"Tzitzis' equals six hundred; eight threads and five knots make six hundred and thirteen" (Tanchuma, Korach 12). The Targum attributed to Yonasan on Bamidbar 15:38 similarly says: "They shall hang them with five knots."⁶⁷

It is unclear whether 613 is a retrospective mnemonic and five knots have another reason, just as the name tzitzis and the eight ends plainly were not chosen for the arithmetic, or whether five knots are instituted to complete 613 and visibly recall the yoke of mitzvos.

The Gemara never mentions five knots. Four Rishonic approaches emerge:

1. An independent din, practiced even with techeiles because it does not contradict the Gemara: Tosafos, end of s.v. Lo Yifchos, citing yesh mefarshim, and Raavad 1:7.
2. Five results incidentally in a particular case from a knot per chulyah; 613 is only a mnemonic. This has two versions:
 - I. Itur, p. 135: Alternating white and blue chulyos, an initial white knot, and a knot of each chulyah's color at its end. Seven chulyos yield five white and three blue knots. Without techeiles, only five white knots are made. With techeiles, the total is eight or fourteen, not five.
 - II. Tosafos 39a, s.v. Lo Yifchos, also Rosh, siman 15:

⁶⁵ Producing five knots is possible only under Tosafos and Rosh's proposal that "each chulyah" means each pair. For Tosafos, however, it cannot be the purpose: Their wording gives five knots only with seven chulyos, not thirteen. For Rosh, it remains possible.

⁶⁶ Mishneh Torah does not specify the tying technique, but Responsa, Blau 138, says: "We wind three times and make the third winding a knot, all one chulyah; leave a small space, wind three with a knot, leave a small space...." Apparently, only the third winding of the first chulyah is tied, while subsequent chulyos are wholly "with a knot." The first cannot move upward because it adjoins the garment (1:7, "beside the garment"), so only its end needs securing. Later chulyos form complete knots for stability in both directions. As explained, no exact tying technique seems indispensable.

⁶⁷ The final editing of both Tanchuma and the Targum attributed to Yonasan postdates the Gemara.

Alternating white and blue chulyos, with knots initially, after each pair, and finally. Seven chulyos consequently yield five knots; thirteen yield eight.⁶⁸

3. Several Rishonim require five only without techeiles.⁶⁹ Techeiles fulfills “You shall see it and remember all Hashem’s mitzvos” through a specific visual reminder beyond tzitzis’s mere presence. The 613 sign compensates for its absence. With techeiles, five knots are unnecessary.⁷⁰

4. The five-knot tradition is not based on the Gemara and is not ruled as halachah. This apparently is Rav Shmuel bar Chofni Gaon’s and Rambam’s view; neither records it.

Assuming five knots are a real din rather than a mnemonic, and that the upper knot requires a particular type, double or involving all threads, should those definitions apply to all five? Perhaps knots required in their own right must meet formal knot standards. Alternatively, only five visible knots are needed to recall 613, even without the formal definition. Rabbeinu Tam, Tosafos and Rosh there, requires the formal standard, as do apparently Mordechai 940 and Yereim, p. 440.

There are three arrangements:

1. Two knots initially and three finally, the prevalent Geonic and Rishonic practice, because “we ascend in holiness.”⁷¹

2. Rabbeinu Chananel has three initially and two finally.⁷² He apparently forms the essential gedil through one chulyah of three knotted windings, then completes one-third gedil and finally five knots.

3. Distributed along the gedil. Rosh, siman 15, as explained in Beis Yosef 11, s.v. U’Mah SheKasav Ella Ikar, requires specifically equal spacing; unequal division harms beauty. Equal spacing is impossible with seven or thirteen chulyos. Though discussing lavan alone, the principle clearly applies also, perhaps more strongly, with techeiles; distributing five among seven or thirteen would mar the beauty.

Sefer HaChinuch, mitzvah 386, distributes them despite unequal spacing: With thirteen chulyos, three between each knot, except four between knots four and five. Whether he includes techeiles is unclear. The Gra, Yahel Or, Pinchas 227a, in his explanation of eighteen knots, puts four chulyos between knots except one between the final two.

B. Practical Application

We now combine the components into the main complete practical methods, then explain particular techniques. All the detailed chulyah and winding rules are clearly not indispensable: “Even if he wound only

⁶⁸ Tosafos do not mean an independent five-knot din whose location “each chulyah” merely describes for seven chulyos. Their wording specifically says that with seven one makes five knots, not with thirteen. The din is a knot per pair, incidentally producing five for seven; 613 is a mnemonic.

The Gra, Yahel Or, Pinchas p. 25 on Zohar 227a, s.v. MeHei Beis Livnas HaSappir, reads Tosafos oppositely as an independent five-knot din, and therefore also gives five with thirteen: After each four chulyos and the final one. This needs explanation. Rosh lacks Tosafos’s precise wording, so the Gra’s reading may fit him.

⁶⁹ Rav Yonasan of Lunel, Hilchos Ketanos, Tzitzis, pp. 28-29; Eshkol I, p. 204; Radbaz, responsum 2333; Mordechai 940 citing Ri; apparently Tur, Orach Chaim 11, and Rashi 39a, s.v. Min Kanaf, “now that we make five knots”; Shulchan Aruch HaRav 11:27.

⁷⁰ Itur likewise has five knots only without techeiles, though incidentally; with techeiles, it does not have five.

⁷¹ Mordechai 940; Eshkol, pp. 204-205, and Itur, p. 137, citing Rav Yehudai Gaon; Rabbeinu Gershon, Menachos 41b; Rashi 39a, s.v. Min Kanaf, Sefer HaPardes p. 21, and Siddur Rashi pp. 228-229; Rabbeinu Tam in Tosafos 39a and Rosh, siman 15, with a little winding between the two initial and three final knots; Piskei HaRid, Menachos 39a. Raavad, citing Rav Natronai Gaon, also has two initially and three finally, but with a chulyah between the two and between each of the three.

⁷² Maaseh Tzitzis, in Rav Tavger’s Kelil Techeiles, Jerusalem 5753/1993; also Sefer HaOrah attributed to Rashi, p. 27.

one chulyah, it is valid” (39a; Shulchan Aruch 11:13; Mishnah Berurah 66). Only one chulyah of three windings is indispensable, together with the Torah-required upper knot. The strictest upper-knot definition is a double knot in all threads near the garment.

For techeiles, Rambam 1:2 validates even one blue winding; other Rishonim do not require blue winding at all for validity. A double knot in all threads followed by a stabilized three-winding chulyah, at least one winding blue, therefore certainly fulfills lavan and techeiles. Everything further is lechatchilah, though the Gemara’s requirements should be followed. We do not attempt every combination, only the principal methods.

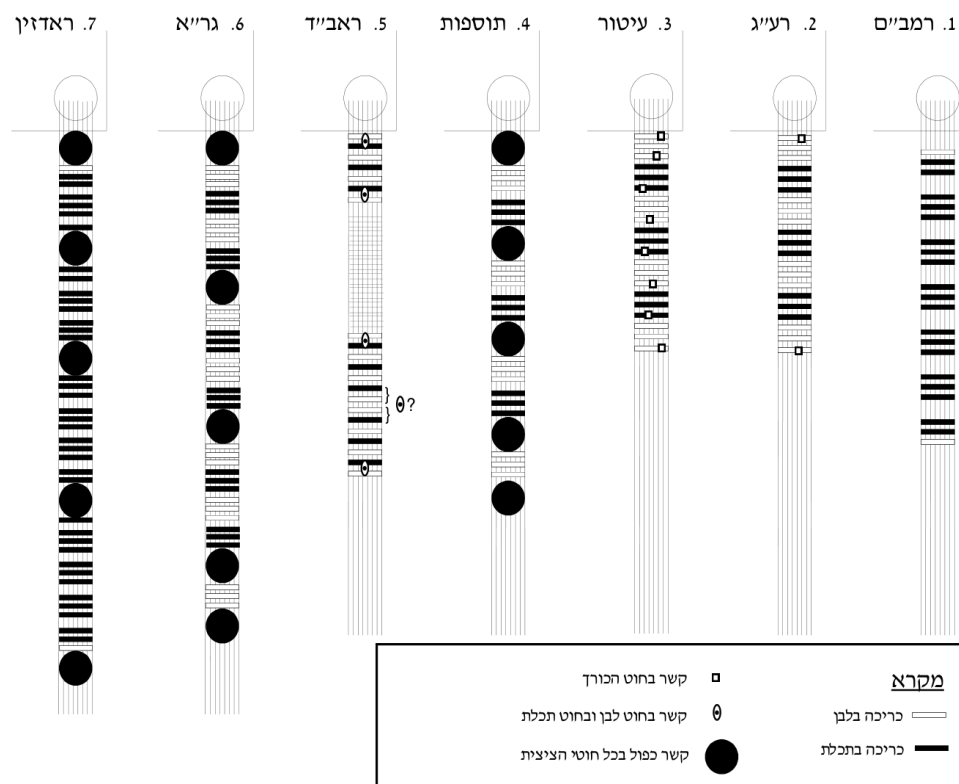
1. Rav Shmuel bar Chofni Gaon, Sefer Dinei Mitzvas HaTzitzis, chapter 4,⁷³ and Rambam 1:7: Seven or thirteen chulyos of three windings each, all blue except the very first and last winding, which are white. Current Yemenite practice follows this even without techeiles, adding the Ashkenazic stringency of an initial double knot in all threads near the corner.
2. Rav Amram Gaon, Geonica II, pp. 330-331: A “lower” knot near the corner; seven or thirteen alternating white and blue chulyos, beginning and ending white; an upper knot at the gedil’s end. The knots apparently are single knots with the winding thread.
3. Itur, p. 137: Like Rav Amram, but with a single winding-thread knot at every chulyah’s end.⁷⁴
4. Tosafos 39a, s.v. Lo Yifchos, and Rosh, siman 15: Knot; white chulyah; blue chulyah; knot; white; blue; knot; white; blue; knot; white; knot. Rabbeinu Tam and Rav Elchanan require double knots; Ashkenazic custom uses all eight ends (Rosh and Mordechai).
5. Raavad, gloss to 1:7 and Temim De’im 39, citing Rav Natronai Gaon: Knot; a chulyah of seven or thirteen alternating white and blue windings, first and last white; knot; a section of ordinary winding—in the gloss, without exactness, tightly or loosely, blue and white; in Temim De’im, “fine winding,” meaning white; knot; a chulyah as before; knot; another such chulyah; knot. The knots use a white and a blue thread.
6. Gra: Yahel Or, Pinchas p. 25 on Zohar 227a, s.v. MeHei Beis Livnas HaSappir, requires a knot after each four chulyos and finally after one last chulyah. There and in his Shulchan Aruch commentary, 11:14, s.v. VeChen Yaaseh, he agrees with Tosafos and Itur that chulyos alternate white and blue.⁷⁵
7. Radzyn: Shulchan Aruch HaAri, Tzitzis 10, also 8, records today’s common lavan practice: “Make the gedil in chulyos, each three windings: Seven windings near the garment, then eight, then eleven, then thirteen, totaling thirty-nine, the numerical value of Hashem Echad.” Shulchan Aruch HaRav 11:31 records this for lavan alone and divides each section between knots into distinguishable three-winding chulyos. In Pesil Techeiles, the Radzyner Rebbe applies it to techeiles, using the Rambam’s colors rather than Rav Amram’s. He apparently holds that splitting chulyos does not impair them; this requires further examination.

⁷³ Published in Rav Tavger’s Kelil Techeiles, Jerusalem 5753/1993.

⁷⁴ Single, because he says the knot together with insertion through the garment hole makes “two insertions”; in the winding thread, because its color matches the chulyah’s.

⁷⁵ We discussed the Gra’s basis and its difficulty above, in the five-knot section’s note on Tosafos.

Comparison of the Seven Tying Methods



The original diagram's columns run from right to left: 1. Rambam; 2. Rav Amram Gaon; 3. Itur; 4. Tosafos; 5. Raavad; 6. Gra; 7. Radzyn.

Legend: An unfilled horizontal winding is lavan; a filled horizontal winding is techeiles. A small square marks a knot in the winding thread. A small outlined oval marks a knot using a white and a blue thread. A large filled circle marks a double knot in all the tzitzis threads.

Particular Tying Techniques

Rav Amram and Tosafos distinguish chulyos by alternating colors. Rav Shmuel bar Chofni and Rambam, whose chulyos are all blue, distinguish them through spaces, requiring knots for stability. The Rambam apparently requires no particular knot technique.⁷⁶ Two accepted techniques make the entire chulyah a knot without an additional fastening.

The first, practiced by Chabad chassidim, who separate chulyos even without techeiles, makes a unifying knot over the chulyah. The second, practiced by Yemenite Jews, who likewise make chulyos without techeiles, is more complex and makes the unifying knot beneath the chulyah, concealing it.

A Chulyah in the Chabad Manner

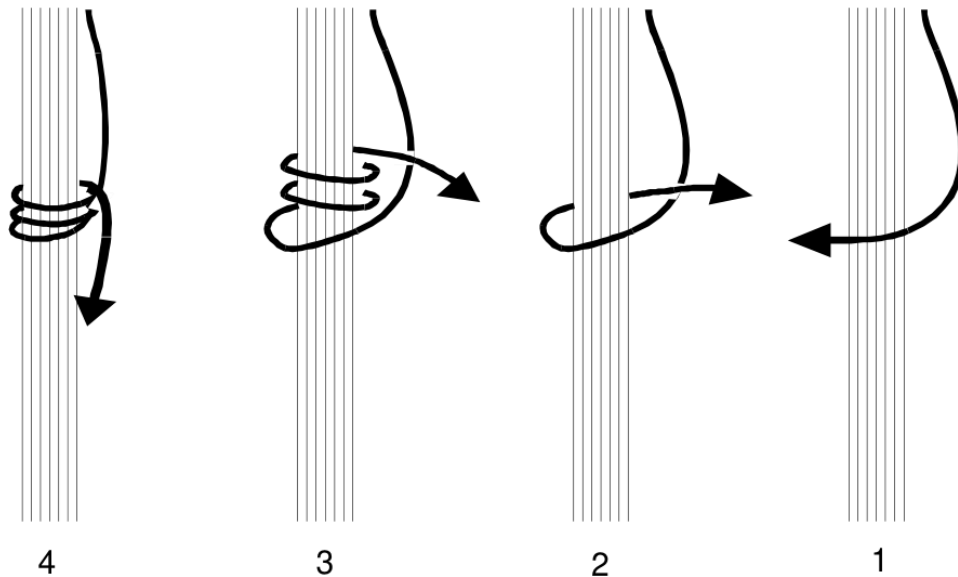
The instructions describe a middle chulyah of three blue windings.

1. Hold the tzitzis hanging toward you, with the blue thread in front. Move it right, then direct its continuation left across the front of the tzitzis, forming a loop on the right.
2. Loosely wind the blue thread rightward behind the tzitzis and forward through the loop.

⁷⁶ See the end of the discussion of a knot for each chulyah above.

3. Continue its end left across the front and repeat step 2 twice more, each winding above the previous one, progressing toward the garment.
4. Bring the blue end downward alongside the remaining threads. The chulyah is formed; tighten its windings in the intended location, beginning with the lowest, first winding and working upward.

Chabad Chulyah Diagram



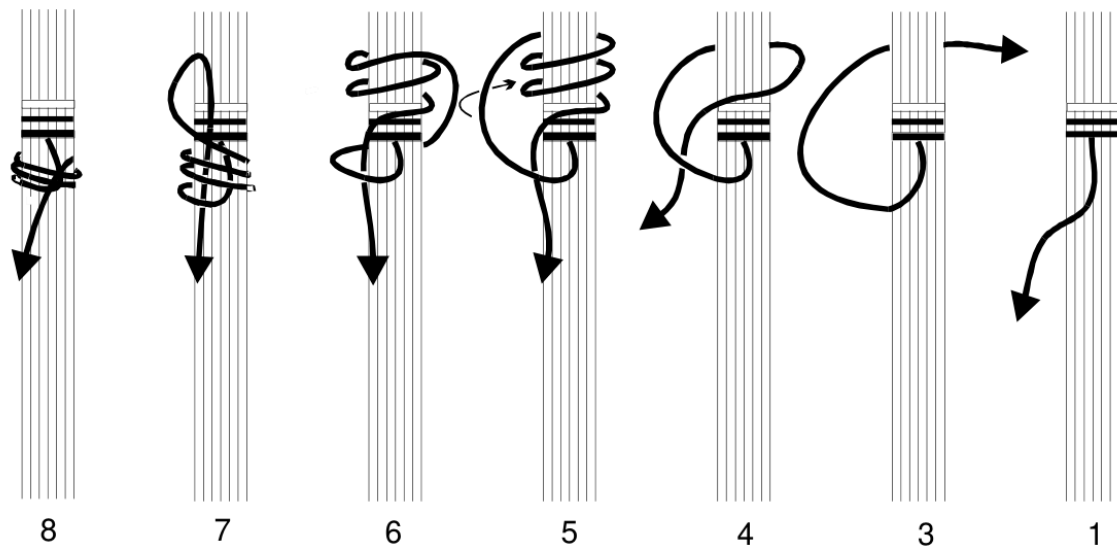
For the first chulyah, treat it as two separate but adjacent units: One white winding and then two blue windings, reducing the repetitions in step 3 accordingly. The last chulyah consists of two blue windings followed by one white.

A Chulyah in the Yemenite Manner

These instructions describe a middle chulyah of three blue windings.

1. Hold the tzitzis hanging toward you, with the blue thread in front.
2. Fold the blue thread left and upward along the tzitzis's left side.
3. Continue it rightward behind the tzitzis, above the intended chulyah's position.
4. Pass it left across the front and into the loop formed in step 2.
5. Repeat steps 3 and 4 twice more, three times total. There are now three loose windings above the intended chulyah position. Bring the blue end alongside the other threads in front, immediately to the left of the blue thread emerging from the preceding chulyah.
6. Tightly wind the continuation of the thread descending from the previous chulyah leftward and around until it returns to its starting point. Position this winding where the new chulyah's bottom should be.
7. Continue leftward directly above and adjacent to the first winding, making a complete second turn toward the garment. Then make a third above the second.
8. Hold the top winding firmly in place, keeping the loop emerging above the chulyah stretched to prevent tangling. Pull the blue end placed alongside the tzitzis in step 5, closing the loop and tightening the chulyah.

Yemenite Chulyah Diagram



Treat the first chulyah as two separate but adjacent units: One white winding and then two blue windings.
Reduce repetitions in steps 5 and 7 accordingly. The final chulyah is two blue windings followed by one white.