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TransScript: A GenderQueer Exploration of *Halachic* Arts Through *Safrut* and the Production of *Tefillin*
(or Dirty Learning: On Making Ritual Objects Without Breaking the Law).

Submitted in partial fulfillment of the requirements for Master of Arts in Hebrew Literature
and Rabbinic Ordination by

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Guiding Texts

כי הוּוּ מִינְצוּ ר' חֲנִינָא וְר' חִיָּא אָמַר לִיה ר' חֲנִינָא לִר' חִיָּא בִּהְדִּי דִּידִי קָא מִינְצִית ח"ו אִי מִשְׁתַּכַּח תּוֹרָה מִיִּשְׂרָאֵל מִהֲדִרְנָא לֵה מִפִּילְפּוּלִי אָמַר לִיה ר' חִיָּא לִר' חֲנִינָא בִּהְדִּי דִּידִי קָא מִינְצִית דְּעִבְדִּי לְתוֹרָה דְּלָא תִּשְׁתַּכַּח מִיִּשְׂרָאֵל מֵאִי עֲבִידְנָא אֲזִילְנָא וְשִׁדְיָנָא כִּיתָנָא וְגַדִּילְנָא נִישְׁבִּי וְצִיידְנָא טְבִי וּמֵאכִילְנָא בִּשְׁרִייהוּ לִיתִמִּי וְאִרִּיכְנָא מִגִּילְתָּא וְכַתְּבָנָא חֲמִשָּׁה חֻמְשֵׁי וְסִלְקָנָא לְמַתָּא וּמִקְרִינָא חֲמִשָּׁה יְנוּקֵי בְּחִמְשָׁה חֻמְשֵׁי וּמִתְנִינָא שִׁיתָא יְנוּקֵי שִׁיתָא סְדְרִי וְאִמְרָנָא לֵהוּ עַד דְּהִדְרָנָא וְאִתִּינָא אִקְרוּ אֶהְדִּי וְאִתְּנוּ אֶהְדִּי וְעִבְדִּי לֵה לְתוֹרָה דְּלָא תִּשְׁתַּכַּח מִיִּשְׂרָאֵל

When Rabbi Ḥanina and Rabbi Ḥiyya would debate matters of Torah, Rabbi Ḥanina would say to Rabbi Ḥiyya: Do you think you can debate with me? Heaven forbid! If the Torah were forgotten from the Jewish people, I could restore it with my powers of analysis and intellectual acumen. **Rabbi Ḥiyya said to Rabbi Ḥanina:** Do you think you can debate with me? You cannot compare yourself to me, as I am acting to ensure that the Torah will not be forgotten by the Jewish people. Rabbi Ḥiyya elaborated: **What do I do** to this end? **I go and sow flax seeds and twine nets with the flax, and then I hunt deer and feed their meat to orphans. Next, I prepare parchment from their hides, and I write the five books of the Torah on them. I go to a city and teach five children the five books, one book per child, and I teach six other children the six orders of the Mishna, and I say to them: Until I return and come here, read each other the Torah, and teach each other the Mishna. This is how I act to ensure that the Torah will not be forgotten by the Jewish people** (*Bava Metzia* 85b:5-7).¹

וצדקתו עומדת לעד זה המזכה את הרבים כגון מלמד ליראי ה' תיקון תפילין לתקן לאחרים.

‘And his merit stands forever’ (Psalm 112:3). This refers to one who brings merit upon the community, for instance he teaches the God-fearing the correct preparation of *tefillin* enabling them to assist others (*Sefer Hasidim* 65).

כְּדִין הֵהוּא רוּחָא קְדִישָׁא סְלִקָא לְעִילָא, וְאַסְהִיד עָלֶיהָ קָמִי מִלְכָּא קְדִישָׁא, כְּדִין פְּקִיד מִלְכָּא עֲלָאָה, לְמַכְתָּב קָמִיָּה כָּל אֵינּוֹן בְּנֵי הִיכְלִיָּה, כָּל אֵינּוֹן דְּאַשְׁתְּמוּדְעֵן קָמִיָּה, הֵה"ד נִיפְתָּב סֵפֶר זַכְרוֹן לְפָנָיו לִירָאִי יְיָ וְלַחֲוָשְׁבֵי שְׁמוֹ. מֵאִי וְלַחֲוָשְׁבֵי שְׁמוֹ. כְּד"א וְלַחֲוָשְׁבֵי מַחְשְׁבוֹת, אֵינּוֹן דְּעִבְדִּין לְשָׁמִיָּה, אֻמְנּוֹתָא בְּכָלָא, אֻמְנּוֹתָא דְתַפִּילִין, בְּכַתְיָהוֹן בְּרַצוּעֵיהוֹן וּכְתִיבְתָּהוֹן. אֻמְנּוֹתָא דְצִיצִית, בְּחוּטֵיהוֹן בְּחוּטָא דְתַקְלָתָא. אֻמְנּוֹתָא דְמְזוּזָה. וְאַלִין אֵינּוֹן חֲוָשְׁבֵי שְׁמוֹ. וְכַתִּיב וְלַחֲוָשְׁבֵי מַחְשְׁבוֹת

That Holy Spirit then rises up and testifies before the Holy King. The supernal King then commands to write before Him all His household members, all those known before Him. This is the meaning of, ‘and a book of remembrance was it is written before Him for those who feared *Hashem* and took heed of His name’ (*Malachi* 3:16). Who are those who ‘took heed of His name’? They are as those in, ‘and those who devise artistic work’ (*Shemot* 35:35). HERE TOO, those who do for His name works of art in any way – the art of the *tefillin*, their compartment and straps and writing them, the art of the *tzitzit*, their threads, the blue thread, and the art of the *mezuzah*. These are those who ‘took heed of His name,’ as in ‘devise artistic work’ (*Zohar, Ve’etchanan*).

¹ Unless otherwise stated, all translations are drawn from *Sefaria* (or have been produced by the author).

Orientation to the Work

I come from a long line of carpenters and watchmakers, and, despite many years of academic counterconditioning, I am truly a tinkerer at heart. Early on, tinkering was a means of safe cross-gender expression. Later, it was a way to pay my way through school. In my adult life, and in my work as a rabbi, I tinker while I teach as I work to repair the world. And while tinkering is almost always a spiritual experience (and has, at the very least, a spiritual dimension), tinkering with *tefillin* is prayer.

Gratitude

I have accumulated a great many debts in the course of this work. I owe a particular debt of gratitude to my thesis advisor, Dr. Abraham J. Berkovitz, who has consistently conveyed a spirit of openness, curiosity, and adventure with respect to this project and who has been a quiet source of support and encouragement (even when things got gross!). I would also like extend my sincere appreciation to Matt Gaoia, who hunts honorably and with great skill; to Pallu Tenney for introducing me to Matt (and sparing me from the hunt); to R. Linda Motzkin for her *chutzpah* and for teaching me to flesh a deer; to R. Yael Romer for patiently and repeatedly listening to me fret about one thing or another; to Travis for his unwavering friendship (and for reminding me to live a little); to my family for willingly enduring that which only love could (and for putting up with all the carcasses); and, to Harold, as always, for loving Maude.

Proposal

The goal of this project is to engage in a dual course of study (one text-based, one skills-based) and, in bringing text-based learning to bear on skills-based practice, a) to engage in processes necessary to the production of a *halachically* sound, ritually viable set of *tefillin* (from beginning to end in the manner described in *Bava Metziah* 85b:4-7, above); and b) produce a detailed guide to the production of *tefillin*

that includes detailed instructions for how to replicate the process of making *tefillin* and/or teaching others to make them. Whereas ritual objects feature significantly in Reform Jewish practice, few Reform Jews are engaged in the design/production of ritual items. Fewer still are queer or trans. It is as such (and as I follow R. Motzkin's lead) that I intend to be among the first queer/trans/Reform Jews to make this mark.

Medium

Skin. Also, ink.

A Few Words

In a world spoken into being, Jewish existence is essentially *textual*, and Jews are a people formed, as sediment forms stone, through pressure over time with words and who, in the molten flow of history, memory and story, have *what to say*.

תפילין *Tefillin*

From the Hebrew/Aramaic, *tefillin* are a product of Jewish material and ritual culture that blur the lines between performance and prayer and that through the 'embodiment' of text, imbue both the object – a pair of small leather boxes containing passages from the Torah according to rabbinic convention – and its user, traditionally men, with holiness.² Though commonly associated with post-Temple rabbinic Judaism, Yehuda Cohn asserts that the practice of wearing *tefillin* is an 'invention' of the late-Second Temple period, one that likely emerged in response to Jewish encounters with Hellenism and with Greek folk-rituals (2008, 2). Though later differentiated, Cohn likens *tefillin* (and the Jewish practice of

²Though regarded as a 'ritual unit', there is some debate about whether *mitzvah tefillin shel yad* and *mitzvah tefillin shel rosh* are separate, independent commandments or if they are interdependent commandments. That one is instructed to recite 'lehaniah tefillin' on the *tefillin shel yad* and 'al mitzvat tefillin' on the *tefillin shel rosh* suggests that they might have developed as independent practices that were later combined.

‘wearing words’) to the Hellenistic use of amulets to instantiate the divine that, like *tefillin*, functioned as prayers (2008, 145). It was, according to Cohn, only later that the *halachot* of *tefillin*, and the practice of wearing and/or writing *tefillin* was attributed *l'Moshe m'Sinai* (a designation, Cohn notes, that both served and sanctified rabbinic authority *vis-a-vis* Jewish ritual and prayer).

Halachah allows for multiple, different processes in the design and construction of *tefillin* resulting in the stratification of *tefillin* into multiple different categories including *peshutim*, which are formed by gluing several pieces of hide into a single piece; *peshutim mehudarim*, which are formed from one piece of hide that is cut and folded like origami and later glued; *dakkot*, which are formed by stretching a thin layer of hide over a thicker base layer; and *gassot* (or *ohr echad*) which are made from a single, thick piece of hide that is stretched, folded and squared.

Though all four categories of *tefillin* meet the minimum *halachic* standard, *gassot tefillin* are of a higher quality than *peshutim* or *dakkot tefillin*. And while one is not required to purchase *gassot tefillin*, one is required, according to the principle of *hiddur mitzvah*, to elevate their practice by spending ‘up to a third’ of the total cost of a less expensive pair of *tefillin* on a pair of *tefillin* that is of a higher quality (*Bava Kamah* 9b; *Shulchan Aruch*, *Orach Chayim* 656:1; *Mishnah Berurah* 37:4).

הלכות Halachot

שכותבין אותן בדיו ושיהיו נכתבין על הקלף

There are ten *halachot* transmitted *l'Moshe m'Sinai* regarding the production of *tefillin*, including that they be written in ink; and that they be written on parchment (*Mishneh Torah* 1:3).

שיהיו מרבעות. וכן תפירתן ברבוע. ואלכסונן ברבוע עד שיהיה להן ארבע זוויות שוות. ושיהיה בעור של ראש צורת שיין מימין ומשמאל. ושיכרך הפרשיות במטלית. ושיכרך אותן בשער מעל המטלית. ואחר כך מכניסן בבתייהן. ושיהיו תופרין אותן בגידין. ושעושין להן מעברת מעור החפוי שתכנס בה הרצועה עד שתהא עוברת והולכת בתוך תובר שלה. ושיהיו הרצועות שחורות. ושיהיה הקשר שלהן קשר ידוע כצורת דל"ת.

Additional requirements include:

that [the *batim*] are sewn closed in a square, and that all four angles, including the diagonals, are equal;

that the skin of the [*tefillin shel rosh*] is embossed with a *shin* on both its right and left sides;

that the *parshiot* be wrapped in *klaf*;

that a hair be wound around the *klaf* covering each *parshiot* before they are placed in their respective compartments;

that [the *batim*] be sewn [closed] with sinews [*giddin*] rendered from a ritually pure source;

that the skin compartment in which [the *parshiot*] are placed should have a place for the straps to pass through so that they can be moved through the [*tefillin*'s] handle;

that the *retzuos*/straps are black;

that the knot with which [the straps] are knotted be formed like a *dalet* (*Mishneh Torah* 3:1).

Gender

הא דתניא "יגנוז" – האי תנא הוא, דתני רב המנונא בריה דרבא מפשרוניה: ספר תורה, תפלין ומזוזות שכתבן מין, ומסור, גוי, ועבד, אשה, וקטן, וכותי, וישראל משומד – פסולין; שנאמר: "וקשרתם" – "וכתבתם" – כל שישנו בקשירה ישנו בכתיבה, וכל שאינו בקשירה אינו בכתיבה.

And that which is taught in a *baraita*, which said that it should be interred, is the opinion of this *tanna*, as Rav Hamnuna, son of Rava of Pashronya, taught: A Torah scroll, *tefillin*, or *mezuzot* that were written by a heretic or an informer, a gentile or a slave, a woman or a minor, or a Samaritan or a Jewish apostate, are unfit, as it is stated: And you shall bind them as a sign on your hand...and you shall write them on the doorposts of your house (*Devarim* 6:8-9). From this juxtaposition, one can derive the following: **Anyone who is included in the *mitzvah* of binding the *tefillin*, i.e., one who is both obligated and performs the *mitzvah*, is included in the class of people who may write Torah scrolls, *tefillin*, and *mezuzot*; but anyone who is not included in the *mitzvah* of binding is not included in the class of people who may write sacred texts.** This *baraita* equates the *halachah* of a Torah scroll written by a gentile to the *halachah* of Torah scrolls written by these other types of people, which are interred (*Gittin* 45b:6; see also *Keset HaSofer* 21:2).

Whereas only those who are bound by the *mitzvah* of *tefillin* are permitted to write *tefillin* (and women are exempt), it is argued that women are prohibited from writing *tefillin*. A number of questions have, however, been raised regarding the nature/designation of the *mitzvah* of *tefillin* as a positive, time-bound commandment that is incumbent only on men, including:

whether the *mitzvah* of *tefillin* is rightly considered a timebound commandment and if, therefore, women are in fact exempt (*Kiddushin* 34a-35a);

whether women are expressly exempt from the *mitzvah* of *tefillin* or if women are exempt from *tefillin* as an extension of and by association with their exemption from Torah study (*Kiddushin* 1:11);

why women are permitted in the production of other ritual items that they are not obligated to use (*tzitzit*, *lulav*, *sukkah*) but not *tefillin*;

why women are obligated to perform the *mitzvah* of *mezuzah* but are not permitted to write *mezuzah*;

why those who are not initially obligated to the *mitzvah* of *tefillin* or who are temporarily exempt from the *mitzvah* of *tefillin* can assume/resume the responsibility, including converts, slaves who have been freed, bridegrooms, mourners and, ironically, *sofrim*, but women are still somehow prohibited (*Sukkot* 26a; *Berakhot* 3:1)³;

also, what's a woman?

and, what about transmen?

Ultimately, questions regarding who is obligated to wear and who, therefore, is permitted to write *tefillin* are complicated by binary conceptions of gender (and even further complicated by *non*-binary conceptions of gender). And while a lot of rabbinic ink has been spilled trying to situate non-binary bodies within a binary system (and the classification of humans has *never* been a politically neutral act), rabbinic attempts to regulate diversity according to a binary (and to force congruence between sex and gender by establishing legal codes that modify rather than reflect reality), were not political; they were practical. Indeed, the rabbis' primary interest was in how people functioned legally in relation to *halachah* and when (*specifically* when) non-binary bodies were to be considered male and when female.

Is a man who has relations with an *androgyne* (who is in some ways *like* a man) in violation of the laws of Leviticus? (*Yevamot* 83b). What is the ritual status of a priest whose *fruit* has been cut or culled or who's figs are diseased or disfigured? (*Yevamot* 8:2). Is an *aylonit*, who is 'like a woman' but also 'like a ram' obligated to marry their brother's widow should he die childless? (*Ketubbot* 11a; *Yevamot* 8:4).

³Rabbi Hananiya ben Akiva says that anyone involved in the work of heaven, including writers of *sefarim*, *tefillin*, and *mezuzot*, their dealers, and *their* dealers, including people who make *tekhelet*, are exempt from *kriat shema*, *tefillah*, and *tefillin* (ref).

Are *tumtumim*, who's *fruit* [read: genitalia] is confusing or concealed or *not-yet-ripe* and who's *halachic* status is uncertain, required to observe commandments from which women are exempt (but to which men are obligated), including, for example, *tefillin*? Which *mikveh* should he/she/they use?

מקוה *Mikveh*

ובזה נכון שכל סופר יזהר שיהיה טהור מקרי ולכתוב בהתבודדות

[I]t is true that every writer should be careful to be pure and to write in solitude (*Aruch HaShulchan* 32:42).

Though not *halachically* mandated, it is the custom of many *sofrim* to *toivel* in the *mikveh* prior to writing *sofer* STaM⁴. Given, however, the reality of trans erasure in gendered Jewish spaces, including *mikveh*, where binary conceptions of gender are rigidly enforced and bodies that are fluid, in flux or that have been modified are unaccounted for, *toiveling* in the *mikveh* is not always comfortable or safe for trans/genderqueer Jews. Fortunately, I know a guy (where, on the Lower East Side, knowing a guy is a kind of currency) and the guy owns the local *Ritualarium*. Fortunately, the guy knows that gendered Jewish spaces, including spaces sanctified for use by Jews as part of Jewish ritual, are often inaccessible to Jews with non-binary bodies (unless, of course, you have the keys!).



⁴ STaM is a shorthand abbreviation of *sifrei Torah*, *tefillin*, *mezuzah* and *megillah*; the texts most commonly written by *sofrim*.

קלף *Klaf*

Tefillin are cut of the same cloth/*klaf* as the Torah. As such, and according to the *halachot l'Moshe m'Sinai*, the *parshiot shel tefillin* are, like *sifrei Torah*, to be written on the contact (or fleshy) side of a hide derived from a kosher animal (even one rendered unfit due to *neveilah* or *treifah*) that has been depilled, scraped and sanded smooth *lishmah (kedushat tefillin)* – for the express purpose of making *tefillin* (*Keset HaSofer* 2:1; 2:8; 2:4; 2:10) Though the animal need not have been *shechted* (ritually slaughtered according to the laws of *kashrut*), the following *kavanah*, which stipulates the provisional and/or conditional use of the *klaf* for items of both higher and lower levels of sanctity, ought to be stated aloud prior to processing the hide:

עורות אלי אני מעבד לשם קדושת ספר תורה ולשם זה אני אשים אותם לתיך הסיד ואני מתנה שאם ארצה לשנות לתפילין או למזוזה או לבתים יהיה הדשות בידי

‘These skins I process for the sanctity of *sefer Torah* and for that I will put them in a bag of lime and I offer that if I want to change to *tefillin* or to *mezuzah* or to *batim*, the pedals are in my hands’

Whereas some authorities maintain that there’s a spiritual advantage to using the hide of a *shlil* (an unborn fetus) for rendering *klaf*, the hides of newly born calves are more commonly used. Though the processing of hides into *klaf* is permitted to non-Jews, *Keset HaSofer* 2:5 stipulates that the work, which begins by soaking the hide in a mix of water and hydrated lime, is best done by Jews, even if only in a supervisory capacity. Once the hide has been removed from the limewash, the hair is removed, and the skin is stretched, scraped, dried and sanded. Once dry, *klaf* designated for use in *sifrei Torah* is cut and scored (using an awl rather than a leaded marking tool), according to the *halachah l'Moshe m'Sinai* which requires that *sirtut* or scored lines be drawn as a guide for the written text (*Keset HaSofer* 3:5). *Sirtut* are not required for *klaf* designated for *tefillin*, save for the uppermost line (and, according to some, the bottom and sides as well), which are required for straightness. Though not required, it is

nevertheless the practice of many *sofrim* to score the *klaf* designated for *tefillin shel rosh* with 4 *sirtut* and the *klaf* designated for *tefillin shel yad* with 7 *sirtut*.

Materials

- Deer hides (x5)
- Hydrated lime
- Barrels (x2)
- Buckets (x2)
- Tarps
- Hide Stretcher
- Twine
- Sandpaper
- Water

Process

Once hunted, the deer is eviscerated, and its organs removed. Once disembowel or ‘dressed’, the deer is splayed, stretched, and suspended, typically from a high branch, in order that its blood might drain.

Depending on the outside temperature (cooler is better), the carcass remains suspended until butchered which, as a matter of food safety, ought to take place within a few days of death lest rot set in.

Butchering an animal for food is a skilled undertaking that requires both a sharp knife and a strong stomach. It also requires precision. Butchering, when done well, is an art. It’s also a bloody mess.

Whereas butchering a deer requires first that the hide be completely removed, fleshing a deer is a separate, albeit related, process that involves scraping the contact (or fleshy) side of the hide with a drawknife (or, in my case, with a power washer) in order that any remaining fat or muscle tissue be removed prior to be submerged in the limewash (which helps prevent fat from staining the skin). Once fleshed, the hide is ready for tanning. Though not a uniform practice, tanning *lishmah*, for purpose of rendering *klaf*, requires that the hide soak in a mix of water and hydrated lime for ...some amount of

time or, more specifically, until the hair begins to fall out and can be easily removed.⁵ What follows is a process of scraping, stretching, and sanding that, with work, renders the hide smooth, flat, and dry. It is at this point in the process, once the *klaf* has been fully rendered, that one is forced to consider the fatal wound that felled the deer and the sad fact that *klaf* making cost the deer its life.

Reflection

I'm not sure it mattered much to the deer; the deer was dead. And dead is dead. But it mattered to me. It mattered to me that Matt hunted with a bow and arrow and not with a rifle. It seemed to me a kinder death. Quieter, maybe? Surely deer hear and are startled by the shot that kills them, which just feels cruel. I understand, of course, that a well-placed arrow will, depending on one's aim, rip a deer's heart and/or lungs apart, killing it instantly, if violently. But a gunshot terrorizes the deer before tearing its body apart. Dead is dead, but there are gentler ways to die. The truth is, I was just glad to have met a hunter who wasn't a wingnut sportsman but sensitive soul who honored the life he took, who received with gratitude the gift that would feed his family, and who returned to the earth any part of that gift that he couldn't eat or otherwise make use of. Truth is, I was glad that I didn't have to hunt or dress the animal myself! I did, of course, have a hand in butchering it. A truly gruesome, but highly instructive exercise. Given the industrialization of food production (and the distance between urban dwellers and rural food sources), one could conceivably be a carnivore their entire life without ever participating in the field-to-table process of dismembering an animal for its meat. Of course, one could also forego meat or choose only to eat meat that was hunted (or shechted) and prayed for. Indeed, one could stay for dinner and eat the deer that was flayed before them, the invitation is open. But...is it *kosher*?

⁵ Some processors will 'cure' their hides with salt prior to tanning in order to slow rot and extend their working time when making *klaf*. *Klaf* that is rendered from hides that have not been salted, but that are tanned *lishmah* is called *zissy klaf* or sweet *klaf*.















***Kulmusim* קולמוסים**

אבל בלעם הרשע בירכן בארז, שנאמר: "כארזים עלי מים", מה ארז זה אינו עומד במקום מים, ואין גזעו מחליף, ואין שרשיו מרובין. אפילו כל הרוחות שבעולם נושבות בו — אין מזיזות אותו ממקומו. כיון שנשבה בו רוח דרומית — עוקרתו והופכתו על פניו. ולא עוד אלא שזכה קנה ליטול הימנו קולמוס לכתוב בו ספר תורה נביאים וכתובים

‘A man should always be flexible as the reed and let him never be unyielding as the cedar. And for this reason, the reed merited that of it should be made a pen for the writing of the *Torah, tefillin and mezuzot*’ (*Taanit* 20a:15).

Though the reed is superior to the feather as an analog for human behavior, the feather is superior to the reed when writing *sofer* STaM (*Keset HaSofer* 3:6; 3:16). And while some, mostly *Sephardi, sofrim* continue to use of reeds for writing, leading-edge feathers (of turkeys or other *kosher* birds) are more commonly used. Ultimately, and as a matter of priority, one’s *kulmus* should be well-formed. To this end, it is common practice among *sofrim* to test their *kulmusim* by writing and erasing the name *Amalek* – who ‘happened upon’ the Israelites as they made their *m’mitzrayim* (and whose memory is to be forgotten) – several times prior to engaging in STaM projects; a practice that helps ensure that one’s *kulmus* is functioning properly and that reduces the risk of profaning the divine name.

Materials

- Turkey wing
- Razor blade (single/double-sided)
- Water
- Wire brush

Process

Whereas many *sofrim* use a heat process to cure/harden their *kulmusim* prior to cutting, others prefer a wet cut. Either way, rendering a feather fit for a *kulmus* requires that it be stripped (of its sheath, plumes, and barbs), cleaned, scraped, hollowed, trimmed and shaped. More specifically, preparing a *kulmus* for writing *sofer* STaM requires first that the wing of the source bird be dismembered, that the primary or

flight feathers be identified, and that any connective tissue be removed. Once removed, preparing the feather for writing requires:

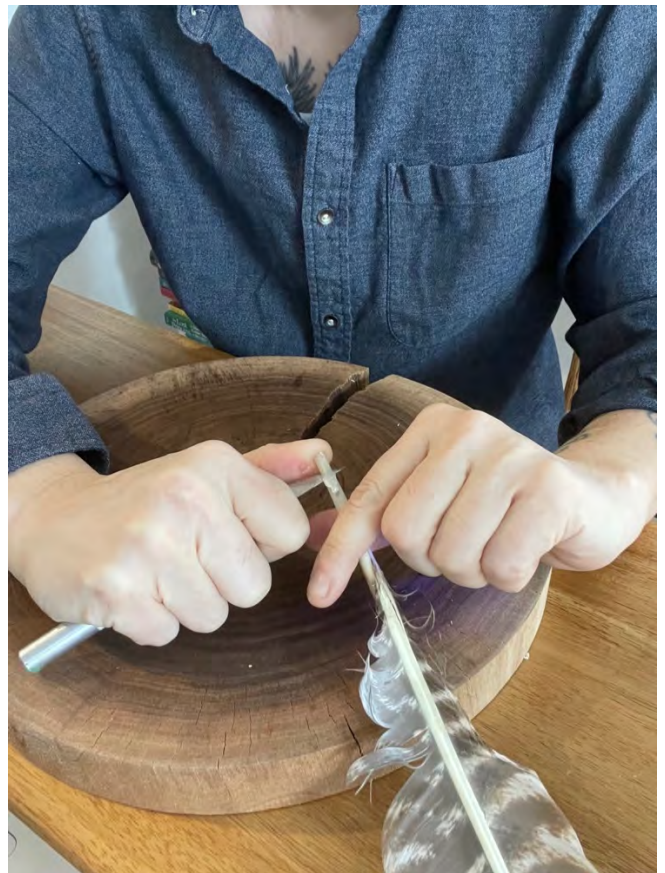
- (if using a wet process) that the tip be soaked and severed;
- that a diagonal cut (about 2.5cm in length) be made from the upper wall toward the severed tip;
- that a second, deeper cut (about 1.5cm in length) be made from the middle position of the first cut down to the tip;
- that any extraneous tissue be removed from the hollow;
- that the tip be split down the middle;
- that the tip be cut angling left.

Reflection

Turkeys are birds. Birds are dinosaurs. Turkeys are ...dinosaurs? Or maybe they're dragons? Judging by their feet, turkeys could easily be dragons. Only I imagine dragons to be quite smart (and turkeys are easily fooled). When told of the hunt that killed the turkey whose wing I dismembered for its flight feathers (and from which I carved my *kulmus*), I was surprised and saddened to learn that the hunter had lured the turkey into the open by mimicking its mating call and that the bird had strutted confidently into range of the hunter's arrow believing that what awaited him was love (only to be met with death). Such betrayal must incur some kind of debt (to love?) or, at the very least, toughens the meat. Given the proximity of a turkey's flight feathers to its heart and that the tips of turkey feathers dip into the turkey's bloodstream (before being dipped by the *sofer* into *dyo*), one wonders if this betrayal seeps into the text when writing *sofer* STaM.









דיו *Dyo*

Rabbi Judah said in the name of Samuel who quoted Rabbi Meir: When I was learning from Rabbi Akiva, I used to add vitriol to the ink [used to write a Torah scroll] and he said nothing to me. When I came to Rabbi Ishmael, he said to me: Son, what is your profession? I said to him: I am a scribe. He said: Son, be careful in your work, for your work is the work of Heaven. If you leave out a single letter or add in an extra letter, you destroy the entire world. I said to him: I have something called vitriol, which I put into the ink. He said to me: Do they place vitriol into their ink? Did not the Torah say (Numbers 5:23) ‘And wrote and erased’ – writing which can be erased (*Eruvin* 13a).

Ink used to write STaM need not be prepared *lishmah* (*Keset HaSofer* 3:3), but is required to be prepared in such a way that is it both lasting and erasable (*Sotah* 2:4).⁶ Likewise, according to *Niddah* 20a and, later, Maimonides *Mishneh Torah* (Laws of *Tefillin* 1:4-5), the color of STaM ink is invariably black.⁷ Though the exact composition of *dyo* is a matter of some debate, this balance, between lastingness and erasability is maintained by using a combination of gallnuts and vitriol (in the form of iron or copper sulfate) added to a mixture of water, gum arabic and lampblack (*Sotah* 2:4, 20a; *Mishnah Shabbat* 12:4).⁸

Materials

Gum arabic
Gallnuts
Iron sulphate
Distilled water
Honey (as needed)

⁶ Whereas the *Mishnah* rules that *dyo* is an acceptable ink for use in *gittin* (which must be written in indelible ink), it is determined that *dyo* is lasting and therefore acceptable for use in writing *tefillin*. There is, however, some concern about its erasability. See *Gittin* 2:3; *Shabbat* 12:4 for a discussion on ‘invisible ink’ attributed to Rabbi Hiya bar Ava wherein he instructs ‘wise men’ who wish to send ‘secret missives to his friends’ to write only with gallnut juice and in which he advises those in receipt of such missives to expose the letter to ferrous sulfate (rusty water) such that it is absorbed into ‘the place of the writing’ and the words of the letter are revealed.

⁷ See also *Mishneh Torah* (Laws of *Tzitzit*), 2:2; *Mishneh Torah* (Laws of *Shechitah*) 7:17.

⁸ See also *Megillah* 2:2; *Gittin* 2:3.

Lamp black
Beeswax candle
Collection spoon (brass)
Collection jar (glass)
Razor
Iron crucible
Bunsen Burner
Mortar and Pestle
Kitchen Scale
Chemistry glass (cylinders, flasks, etc.)
Gloves/safety goggles
Respirator
Paper filters
Wooden stir sticks
Storage container (glass)

Recipe (adapted from *Keset HaSofer* 3:1)

3gm *gumy-rabik* (gum arabic)
3gm *afatsim* (gallnuts, crushed)
1gm *kankantum* (vitriol/iron sulphate)
60ml water
Lamp black (rendered/collected from burning beeswax)
Honey, as needed (for flow)
Sunlight

Process

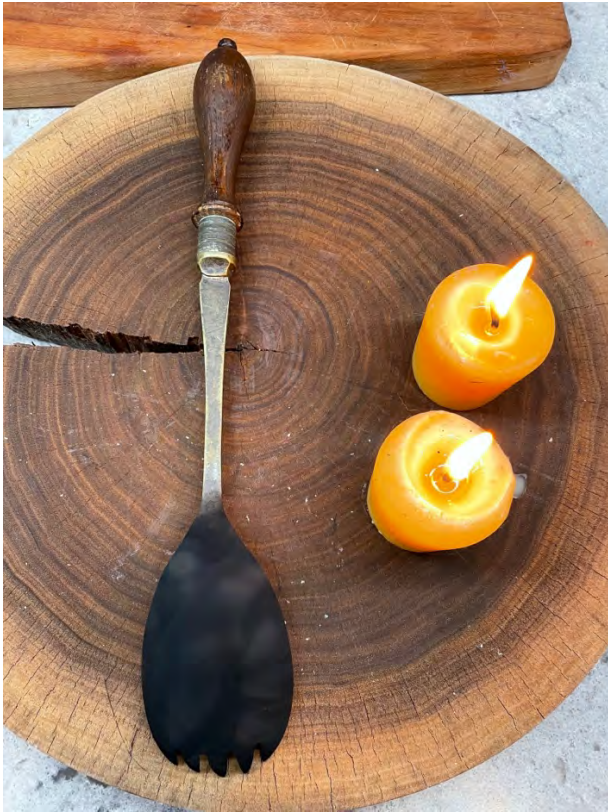
crush gallnuts into a fine powder using a mortar and pestle;
add 40ml boiling water;
cook/reduce on an open flame;
filter the tannic acid extract;
add powdered green vitriol;
add gum arabic to 20 ml of hot water;
filter, shake;
expose to the sun for 7 days.

Reflection

Whereas lampblack is a by-product of a lit candle, the ‘darkness’ that colors *doyo* is drawn from the light, (but is black, nonetheless). Similarly, when added to a gallnut reduction, vitriol – bitterness – renders *doyo* indelible. What business do darkness and/or bitterness have in the writing of *sifrei* Torah or of *tefillin*? The Torah, of course, contains all things. But how are we to reconcile that the Torah itself is, in part, made with darkness or that words of Torah are saturated with vitriol?

It was while lost in thoughts such as these that my initial attempt to manufacture *doyo* resulted in a minor explosion. It had occurred to me to check the temperature rating of the glassware that I intended to use. What had *not* occurred to me was that there’s a difference between direct and indirect heat and what effect an open flame might have on non-tempered glass. I had, of course, been warned (by Jeffrey, an actual scientist), that my makeshift workstation fell short OSHA standards and would fail a safety inspection. Still, though I lack even the most basic understanding of science (or scientific safety, for that matter), I have faith. And while the glass *did* shatter (which was messy and terrifying) my faith is firmly intact. Philosophy, poetry, theology... it’s all part of the work. So too is chemistry!



















פרשיות Parshiot

The form, content, and process of writing *sifrei Torah*, *mezuzot*, *Megilat Esther* and *parshiot shel tefillin* are delineated in the *Keset HaSofer*, the compendium of laws for *safrut* written and published by R. Shlomo Ganzfried (1835). Widely referenced as a legal ‘style’ guide for *sofrim*, the *Keset HaSofer* stipulates:

that *parshiot shel tefillin* are to be written *lishmah* לשמה (4:1) on the contact surface of the *klaf* (see also *Menachot* 32a);

though not *halachically* required, that *parshiot shel tefillin* are to be written in reference to a *tikkun* (4:5) or, according to *Keset HaSofer* 4:8, read aloud while writing;

that only those whose are Hebrew literate are permitted to write *parshiot shel tefillin* (4:9);

that according to the principle of *hiddur mitzvah*, the *parshiot shel tefillin* ought to be written in an attractive manner (*ktav tam*) on *klaf* without holes using the *ktav ashuri*, the font thought to have been used by *Moshe* on the *luchos* and in the *sifrei Torah* (7:1; 20:5)⁹;

that disputes regarding the clarity/validity of the text are to be adjudicated by a child (6:1-4)

that there is to be a space between each letter (that it is forbidden for the letters of the *parshiot* to touch) (7:1);

that the *parshiot shel tefillin* are to be written in a particular order, though there is some debate about which order is correct (9:1; 9:9; 20:1; 20:8; 26)¹⁰;

that the divine name is to be written *kedushat hashem* (with *kavanah*) and never erased, not even in part (10; 11; 12)¹¹;

that the four *parshiot* of the *bayit shel rosh* are to be written on one piece of *klaf*, whereas the four *parshiot* of the *bayit shel yad* are to be written either on one piece of *klaf* or on four separate pieces that have been stitched together (20:2);

that the lines of each *parshiot* are right justified (20:2);

⁹ See *Shabbos* 104a; *Yerushalmi Megillah* 1:1; *Sanhedrin* 21-22. Additional fonts include the *Ashkenazic* script *Beit Yosef* which, ironically, was codified by Yosef Karo, a Sephardic Jew (and author of the *Shulchan Aruch*) and the *Ktav Ari*, codified by the kabbalist R. Yitzchak Luria.

¹⁰ According to *Menachot* 34b, the order in which the *parshiot* are to be scribed corresponds to their sequence in the Torah. According to Rabbeinu Tam, *Vehaya im* precedes *Shema*. There is also some debate about which *parshiot* one ought to write first, the *tefillin shel yad* or the *tefillin shel rosh* (*Keset HaSofer* 20:8; 26).

¹¹ The *Aruch HaShulchan* instructs *sofrim* to take considerable care when preparing to write the divine name and suggests that in advance of writing *sofrim* take ink into their *kulmusim* and either write or fix a letter in need of correction before sanctifying the ink for *The Name* (32:42).

that there is to be a space the height of a *lamed* left at the top the *klaf* and the length of a *tzadi* at the bottom of the *klaf* when writing and that there a space be left between each *parshah* of the *tefillin shel rosh* that is equal to two *tets* (20:4);

that *Kadesh*, *Vehaya ki*, and *Shema* are all written at the beginning of the line and that, for *Kadesh* and *Vehaya ki*, a gap of 9 letters be left at the end (20:6);

that a space of 9 letters is left before writing *Vehaya im* (20:6).

Once complete, the *parshiot* are to be inserted upright – with the margins positioned toward the top of the housing – into the *batim* in the order that they appear in the Torah (*Kadeish*, *Vehaya ki*, *Shema*, *Vehaya im*) and in which they were written (*Keset HaSofer* 26:3). Prior to inserting the *parshiot* into the *batim*, they should be checked for accuracy. Each *parshah* is then rolled from end/left to beginning/right, wrapped with a hair from a ritually pure animal, covered in *klaf*, and wrapped again (with an additional hair) (*Keset HaSofer* 26:1). It is the custom of many *sofrim* to use the hair of a calf's tale in symbolic atonement for the sin of the *egel zahav*, the golden calf. These hairs must protrude from the base of the *titura* (of the *tefillin shel rosh*) and be visible alongside either the *Kadeish* compartment or the *Vehaya im* compartment. According to the *Zohar* (*Parshah Pekudei* 330-332), these hairs are left visible in order that nefarious forces might feel included in the *mitzvah*/acts of holiness (and to reduce the likeliness that they will cause harm). It is *halachah l'Moshe m'Sinai* that the *batim* be sewn closed with sinews from a ritually pure animal, just as *sifrei Torah* is sewn (*Keset HaSofer* 26:4), and that the *batim* be sewn – backward and forward, above and below – in the form of a square using a single thread to produce three stitches on each side of the four sides of the *titura* for a total of twelve stitches altogether (*Keset HaSofer* 26:6-7). Depending on the category/construction of the *tefillin*, some argue that the *batim* are to be glued before being sewn, though this appears to be a minority opinion.

The *parshiot* housed in the *batim shel tefillin* include:

Shemot 13:1-10 – Kadeish

וידבר יהוה אל־משה לאמר קדש־לי כל־בכור פטר כל־רחם בבני ישראל באדם ובבהמה לי הוא ויאמר משה אל־העם זכור את־היום הזה אשר יצאתם ממצרים מבית עבדים כי בחזק יד הוציא יהוה אתכם מזה ולא יאכל חמץ היום אתם יצאים בחדש האביב והיה כִּי־יבאך יהוה אל־ארץ הכנעני והחתי והאמרי והחוי והיבوسی אשר נשבע לאבתך לתת לך ארץ זבת חלב ודבש ועבדת את־העבדה הזאת בחדש הזה שבעת ימים תאכל מצת וביום השביעי חג ליהוה מצות יאכל את שבעת הימים ולא־יראה לך שאר בכל־גבלך והגדת לבנך ביום ההוא לאמר בעבור זה עשה יהוה לי בצאתי ממצרים והיה לך לאות על־ידך ולזכרון בין עיניך למען תהיה תורת יהוה בפך כי ביד חזקה הוצאך יהוה ממצרים ושמרת את־החקה הזאת למועדה מימים ימימה

Shemot 13:11-16 – Vehaya ki

והיה כִּי־יבאך יהוה אל־ארץ הכנעני כאשר נשבע לך ולאבתך ונתנה לך כל־פטר־רחם ליהוה וכל־פטר שגר בהמה אשר יהיה לך הזכרים ליהוה והעברת וכל־פטר חמר תפדה בשה ואם־לא תפדה וערפתו וכל בכור אדם בבניך תפדה והיה כִּי־ישאלך בנך מחר לאמר מה־זאת ואמרת אליו בחזק יד הוציאנו יהוה ממצרים מבית עבדים ויהי כִּי־הקשה פרעה לשלחנו ויהרג יהוה כל־בכור בארץ מצרים מבכר אדם ועד־בכור בהמה על־כן אני זבח ליהוה כל־פטר רחם הזכרים וכל־בכור בני אפדה והיה לאות על־ידכה ולטוטפת בין עיניך כי בחזק יד הוציאנו יהוה ממצרים

Devarim 6:4-9 – Shema

שמע ישראל יהוה אלהינו יהוה אחד ואהבת את יהוה אלהיך בכל־לבבך ובכל־נפשך ובכל־מאדך והיו הדברים האלה אשר אנכי מצוך היום על־לבבך ושננתם לבניך ודברת בם בשבתך בביתך ובלכתך בדרך ובשכבך ובקומך וקשרתם לאות על־ידך והיו לטטפת בין עיניך וכתבתם על־מזוזות ביתך ובשעריך

Devarim 11:13-21 – Vehaya im

והיה אם־שמע תשמעו אל־מצותי אשר אנכי מצוה אתכם היום לאהבה את־יהוה אלהיכם ולעבדו בכל־לבבכם ובכל־נפשכם ונתתי מטר־ארצכם בעתו יורה ומלקוש ואספת דגגך ותירשך ויצהרך ונתתי עשב בשדך לבהמתך ואכלת ושבעת השמרו לכם פן יפתה לבבכם וסרתם ועבדתם אלהים אחרים והשתחוויתם להם וחרה אף־יהוה בכם ועצר את־השמים ולא־יהיה מטר והאדמה לא תתן את־יבולה ואבדתם מהרה מעל הארץ הטבה אשר נתן לכם ושמתם את־דברי אלה על־לבבכם ועל־נפשכם וקשרתם אתם לאות על־ידכם והיו לטוטפת בין עיניכם ולמדתם אתם את־בניכם לדבר בם בשבתך בביתך ובלכתך בדרך ובשכבך ובקומך וכתבתם על־מזוזות ביתך ובשעריך למען ירבו ימיכם וימי בניכם על האדמה אשר נשבע יהוה לאבתים לתת להם כימי השמים על־הארץ

Materials

Klaf – as above
Kulmus – as above
Dyo – as above
Inkwell
Calf's hair
Scalpel
Awl
Tikkun
Ruler
Lightbox
Tape

Process

Once stretched, dried, sanded and cured, preparing *klaf* for writing STaM projects requires that it be cut and scored. While being careful not to leave any extraneous marks, an awl is used (rather than a leaded tool) to etch a series of straight/parallel lines into the writing surface of the *klaf*. The distance between lines is, when writing *tefillin*, determined in part by the size of the *batim* and, by extension, the necessary font size. There is, likewise, a necessary correlation between the distance between the *sirtut* and the size of the *kulmus* (specifically, the writing tip) as the size of the *kulmus* should be equal to $\frac{1}{4}$ of the distance between lines.

Reflection

According to the *Bavli* (*Berakhot* 55a), Bezalel constructed the *mishkhan* by combining the letters of the Hebrew *aleph-bet* just as the source of all creation, who separated day from night, used the letters of the Hebrew *aleph-bet* to speak the world into being. This same command of the *aleph-bet* was ascribed to Solomon, who is identified as *אֵיחָאֵל*, as one who understands the letters of G-d (*Midrash Mishlei* on Proverbs 30:1), and to Ezra, who drew on the mystical, mathematical character and generative potential of the *aleph-bet* in order to rebuild Solomon's Temple. If, according to the *Bavli*, the *otiot* are a source of creation and ongoing revelation (and it is through the *aleph-bet* that G-d speaks), perhaps writing Hebrew is also a means of knowing G-d? There are certainly times when writing *sofer* STaM that I have felt this to be true, like when the ink seems impossibly to float on top of the parchment or when the wet letters catch the light and soften the contrast of black fire on white fire. The effect is ethereal, exquisite... divine?

Either way, writing the Hebrew *aleph-bet* in STaM style feels like a sacred task. And, as in prayer, repetition, and attention to detail ground me in the work. The Hebrew letter *reish* (ר) is 3 units wide and

3 units high. Should the *width* of the letter *reish* measure less than 3 units, one risks confusing it with a *vav* (ו). Should the *height* of the letter measure less than 3 units, one risks confusing it with a *yud* (י). What's a unit? It depends. The units vary depending on the cut of the quill and on the space between the lines. As a matter of process, however, the difference is nearly imperceptible, a slight of hand measured in micro-fractions. Still, when it comes to writing words of Torah, these details, these seemingly insignificant details, matter quite a lot. Indeed, tradition dictates that if even one letter in *the Sefer Torah* is of questionable clarity (and could be mistaken for another), the whole work is *pasul*, invalid.

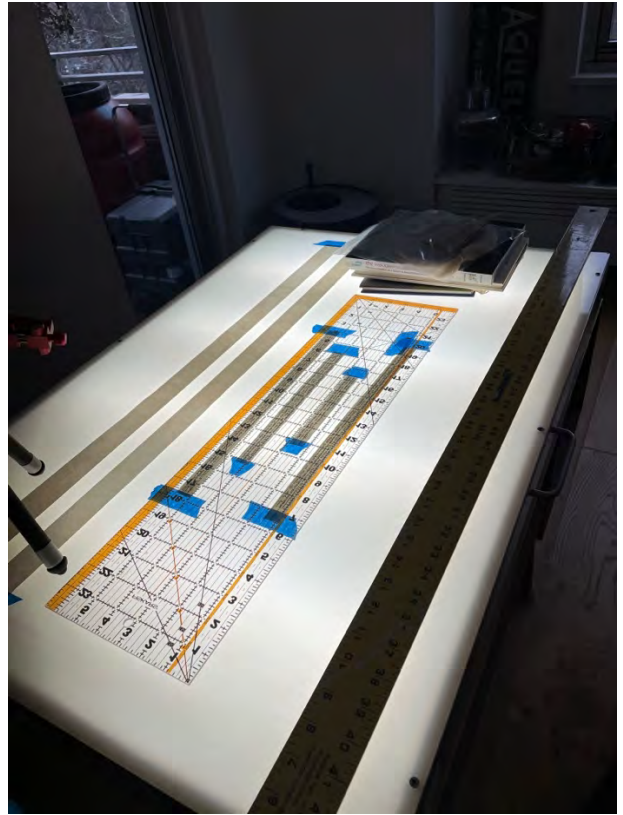
Just as Hebrew word/letter forms are imbued with divine potential, so too is writing/reading words of Torah a means of engaging more deeply with divinity. You see, I struggle with spoken Hebrew. It frustrates me. I can't make sense of words when they're 'in the air'. Speak to me in Hebrew and I will visualize the words as they would appear written on paper. Not in the sterile fixed-font style of most published works, but in the *k'tivah tamah* of *Sefri Torah*. Only then can I translate and respond. Visualizing words in this way makes for slow conversation. Writing on the other hand allows, indeed demands, that I go slow. And it is through the slow, careful consideration of each letter that I come to understand each word, including their relationship to the Jewish story overall and, importantly, my place in it.¹²

¹² Portions of this section were prepared by the author in an earlier work.

תפילין על יד - רע"י (עורות אר"י - עיטת הט"ז)

היה כי יבאך יידיד אבי ארץ הכנעני כאשר ישבע לך ולא תהיה כח ונתתה לך ונתתה כל פטר
רום ליידיד וכל פטר שלח בהמה אשר יהיה לך הזכרים ליידיד וכל פטר חומר תפרה בשה
אם לא תפרה ויערפתו וכל בכור אדם בביתך תפרה ויהי כי יעלך בנך מזור לאמר מה
את ואמרת אליו בוחק ידי הוציאנו יידיד ממצרים מבית עבדים והיו כי תקשה פרעה
לשלונו והיה יידיד כל בכור בארץ מצרים מבכר אדם ועד בכור בהמה על כל אגז וזהו
ליידיד כל פטר רום הזכרים וכל בכור בני אפרה והיה לאות על כל וכלו תשפט בין
ענין כי בוחק ידי הוציאנו יידיד ממצרים

על מזהב בראש ובישעריה
.....היה אם ישמעל תשמעו אל מצותי אשר אנכי מצוה אתכם היום לאהבה את יהוה אלהים ועליו בכל לבכם
ויבטל צעכם ונתתי מטר ארצכם בעתו יורה ומלקיש ואספת הגר והגרעף ויחלף ונתתי עליב בערך לבחמך
ואכלת וישבעת השמרי לכם פן יפתה לבבכם וסרתם ועברתם אלהים אחרים ודעו עליב מרת מל הארץ הטבה
יהוה בכם ויחלף את השמים וכל יהוה מטר ודאדמת לא תתן לא יבולת ואברתם מרת מל הארץ הטבה
אשר יהוה נתן לכם וישמח את דברי אלה על לבכם ועל צעכם וקשרתם אתם לאות על יכם והיו לזמנות
בין עליכם ולמדתם אתם את בניכם לירבם עם בעלת ברך ובעלת ברך ובמקום וכתבתם על מזוזת
ביתך ובישעריך למען ירבו ימים וימים בניכם על האדמת אשר ישבעו יהוה לאהבתם לית להם כמי השמים על הארץ
ביתך ובישעריך למען ירבו ימים וימים בניכם על האדמת אשר ישבעו יהוה לאהבתם לית להם כמי השמים על הארץ





רצועות *Retzuos*

The *retzuos* or straps used to wrap *tefillin* must be cut *lishmah* from the hide of a ritually pure animal (*Keset HaSofer* 23:1). According to the *halachot l'Moshe m'Sinai*, the straps must be blackened *lishmah* using pigment that is also ritually pure (*Keset HaSofer* 23:3; see *Menachot* 35a for a more expansive ruling on *retzuos*, including the possibility that *tefillin* may be tied with green, white, or purple straps).

Related *halachot* require that:

- the straps for both the *tefillin shel rosh* and *tefillin shel yad* not be narrower than a grain of barley (*Keset HaSofer* 23:4);

- the straps of the *tefillin shel rosh* reach to one's navel or, according to *Shimusha Rabba*, to their circumcision (*Keset HaSofer* 23:4);

- the strap of the *tefillin shel yad* be long enough that one can tighten it on their bicep, wrap it around their arm seven times, reach to their middle finger, wrap three times around their middle finger and be tied (*Keset HaSofer* 23:4);

- the form of the knot of the *tefillin shel rosh* be tied *lishmah* to look like a *dalet* and that the knot of the *tefillin shel yad* be tied to look like a *yud* in order that the *dalet* and the *yud* should, when considered together with the *shin* on the *tefillin shel rosh*, spell *Shaddai* (*Megillah* 1:9; *Menachot* 35b; *Eruvin* 97a; *Shabbat* 62a).

Materials

- Hides (prepared, x2)
- Strap cutter
- Paint
- Applicator
- Measuring tape

Process

Once painted and dried, *retzuos* are cut in the round from a single hide using a strap cutter set to the desired width.

Reflection

Whereas it has been determined that the optimal width of the *retzuos* is between 9-11mm, such specifics have not been calculated for their length. Indeed, as above, the length of the *retzuos* for the *tefillin shel*

yad is relative to the size/circumference of one's arms/hands/fingers and for the *tefillin shel rosh*, to the distance between one's forehead and their circumcision. And while conditional measures are imprecise at best, according to this system, the uncircumcised are without a reference point altogether.







בהים *Batim* (in process)

According to the *Keset HaSofer*, *batim shel tefillin* are to be made from the hide of a single, ritually pure animal that has been processed/tanned *lishmah* and squared diagonally (21:1; 21:6). Though not prescribed, the dimensions of the *bayit shel rosh* (which is comprised of four compartments clearly delineated from the top of the housing to the *titura*/base) and of the *bayit shel yad* (which is comprised of only one) ought to be designed such that their width matches their length (*Keset HaSofer* 21:2-3; 21:6). The proposed dimensions for this project are:

Tefillin Shel Rosh

Base: 44mm x 11mm

Bayit: 32mm x 34mm x 31mm

Titura: 64mm

Tefillin Shel Yad

Base: 46mm x 12mm

Bayit: 31mm x 33mm x 31mm

Titura: 63mm

It is *halachah l'Moshe m'Sinai* that a three-armed *shin* ought to be pulled from the leather on the right side of the *tefillin shel rosh*, that a four-armed *shin* ought to be pulled from the left, and that the lower point of each *shin* should reach to the *titura* (*Keset HaSofer* 21:8-9). It is also *halachah l'Moshe m'Sinai* that the *maabarta*, the channel formed by the *tiruta* and through which the *retzuos* are run, be cut *from* the *titura* (which is left long on one side)

There is some debate regarding whether *batim shel tefillin* are required to be black (according to Maimonides, it is a *mitzvah m'Sinai*); there are, however, those who argue that *tefillin* are valid even if they are not black (or if the *batim* were not blackened *lishmah*).

Materials

- Cow hides (x5)
- Barrel
- Bucket
- Water
- Hydrated lime
- Draw knife
- Press
- Hand drill
- Sandpaper

Shin plates

Unlike the three-armed *shin* of STaM, SeMaG explains that when the letter *shin* was engraved on the *luchos*, the tablets upon which the ten commandments were written, a four-armed *shin* was required in order that a three-armed *shin* be revealed (*Laws of Tefillin* 104b). Given the fine detail and exacting specifications required for each *shin* plate to produce a legible letter when pressed, the *shin* plates are on order to be cut using a laser-operated CNC machine. Also, despite my best efforts (and a series of failed

attempts to carve and/or cast the plates in brass, steel and resin), I was unable to achieve satisfactory results.

Silver needle

Just as Solomon built the temple without use of iron tools and Aaron's *ephod* was engraved with the names of the twelve tribes using the *shamir*, the use of iron and steel – from which weapons of war are often made – in the production of ritual objects is discouraged, though not prohibited. It is, as such, the custom of many *sofrim* and makers of *tefillin* to sew the *batim* closed using a silver or golden needle to run the *giddin* through the *titura*.

Materials

- Iron crucible
- Concrete
- Needle form
- Borax
- Silver
- Propane Gas
- Respirator

Process

Forging a needle requires, first, that a mold be cast in concrete and that, once set, molten metal be poured into the cast. It is important when casting that the mold be set in an iron crucible (or in a container that can withstand high/direct heat). It is also important, when smelting source metals that the source metal have a high purity rating (and that it is not an alloy). Whereas smelting is the process of separating ore from alloys, highly alloyed metal will produce little material of use. And so it is that I learned that the silver bangles I bought while travelling in India years ago (and that I had sacrificed to this project) were made mostly of pewter.







Paint

As noted, there is some debate about whether *batim shel tefillin* are required to be black. Though not stated explicitly, Maimonides asserts *batim* are to be painted black as an extension of the *halachic* requirement that the *retzuos* be painted black (*Shulchan Aruch, Orach Chayim* 32:40). Others maintain that the *batim*, which are traditionally black, are blackened not as a requirement of *halachah*, but for the purpose of *hiddur mitzvah*.

Materials

Lampblack
Shellac
varnish

Process

Once collected, lampblack is added to a reduction of shellac and mineral spirits (or denatured alcohol), mixed with shellac and heated. Whereas it is forbidden that anything should stand between the *batim* and the air, one must ensure that the paint is of a consistency that saturates into the hide rather than form a film on top of the hide. Achieving the proper consistency requires some willing to experiment and is/was a process of trial and error.

A Note About *Giddin*, *Devek* and Calf's hair

Some of the materials needed for manufacturing *tefillin* require a high level of training/skill to produce but are nevertheless available commercially, including *giddin*, calf's hair, and *devek* (glue). According to the *halachot l'Moshe m'Sinai*, *batim shel tefillin* are required to be sewn closed using sinews rendered from a ritually pure animal (and, when called for, with glue). Likewise, it is *halachah m'Sinai* that a hair be wound around the *parshiot* before placing them in their respective compartments which, according to

the *Zohar*, is necessary to mollify nefarious forces (*Keset HaSofer* 17:4; *Zohar* 2:237b). Materials necessary to the construction/completion of *batim shel tefillin* but that, as above, were not possible to make, were sourced from *Merkaz HaSofrim*.



Reflection

Sourcing skins for the *batim* (which are made from thicker hides than *klaf*) was perhaps the most challenging and emotionally/spiritually fraught part of this project. Whereas cattle are not commonly hunted, the primary source of cowhide are meat processors. Farmers and butchers also occasionally deal in hides, but rarely as a commercial endeavor. After an exhaustive search, which involved calling producers of kosher meat throughout the state and inquiring about the purchase of whole hides, I was referred to a small, independent meat processor in Milan, NY whose primary business was butchering carcasses for local farmers. Seemingly a one-man operation, the owner welcomed my interest (and the extra income) as selling the hides to me at a profit also reduced his waste related costs. And so, I made the trip to Milan where I was met first with a display of pro-Trump, anti-gay signage and then toured

through the facility where, in a puddle buried deep in the meat cooler, a pile of massive, wet cow skins awaited.

“Do you want a bag?” the purveyor asked. Confused as to how I might otherwise package this blood puddle into my car, I said yes.

That’s when things started to really get gross. Rather than retrieve the bags from where they were stored, the purveyor motioned that I should grab a skin and proceeded to drag the bloody hides through the processing center and out the back door where, to my horror, the discarded remains of dozens of dismembers cows were kept in barrels awaiting collection. Heads, limbs, intestines. I said a prayer but vowed also not to return.

So now I had two massive, wet, heavy hides, though I only needed a small fraction of each. In fact, all I needed from each hide was roughly one square foot of neck and face skin. What to do with the remainder of each hide was a considerable source of concern (and, as someone who lives in an apartment in the city) a serious, time-sensitive logical question. Should I bury them? If so, where? Can I bring them to an incinerator and have them cremated (as one might with a domestic animal)? Does Judaism permit such things? Is there a meaningful difference between the skin of an animal and the animal itself? Will sanitation pick up the remains? Does having the remains picked up by sanitation honor the animal? I’ll tell you; I don’t know. What I do know is that with precious little time to consider the ethical implications of my actions, I decided to build a wooden coffin a *genizah*?) for each hide, which I then submitted to the care of the Director of Institutional Animal Care and Use Committee at LaGuardia Community College Vet/Tech Program (of which I am a member) with a request that the hides be buried.





Process

Having excised from the hide the face and neck portions for use in making *batim*, I proceeded, as above to flesh and tan the skins using a draw knife and a mix of water and hydrated lime. It is in this (wet) stage of the process/processing that the project of making *batim* and of making *tefillin* overall stands.

Next Steps (and other unfinished business)

Final steps in the production of *batim shel tefillin* include:

- reverse engineers a press for shaping/squaring the *batim* (and for pressing, pulling out and painting the *shinim*);

- shaping each *batim* according to exact specifications re: size and squareness through alternating wet/dry processes;

- inserting the *parshiot* into the *batim* (as above);

- hand drilling the holes through which the *giddin* is threaded (and gluing/sewing the *batim* closed);

- painting the *batim* black (using the shellac-based paint produced for the *retzuos*);

- tying the *retzuos* as required by *halachah l'Moshe m'Sinai*.

Once complete, the only thing left to do it pray.

Primary Source Material

קסת הספר (Ganzfried 1835; trans. Friedman);
משנה תורה הלכות תפילין ומזוזה וספר תורה (Maimonides; trans. Touger, 2007);
Exodus 13:1-10; Exodus 13:11-16; Deuteronomy 6:4-9; Deuteronomy 11:13-21

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Source Sheet

<https://www.sefaria.org/sheets/520007.527?lang=he&with=all&lang2=he>

Sofrut

Shemot 13:1-10
Shemot 13:11-16
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Megillah 8b:19-20	Berakhot 25a:2
Sanhedrin 4b:12	Berakhot 25b:24-25
Menachot 42b:1	Berakhot 60b:6
Shabbat 108a:11	Shabbat 12a:4
Shabbat 28b:2-5	Shabbat 28b:2-5
Shabbat 23a:5	Shabbat 49a:6
Shabbat 79b:3-6	Shabbat 62a:3
Shabbat 108a:12	Shabbat 108a:11
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Chullin 119b:20-21	Menachot 37b
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