

HALACHIC AND HASHKAFIC ISSUES IN CONTEMPORARY SOCIETY

87 - ELECTRICITY & SHABBAT: PART 1 - GENERAL PRINCIPLES

OU ISRAEL CENTER - SPRING 2018

A] HALACHIC ISSUES CONCERNING ELECTRICITY¹

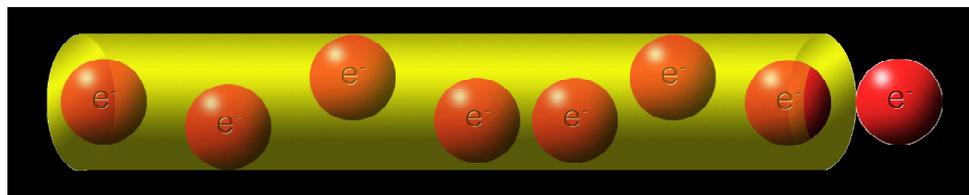
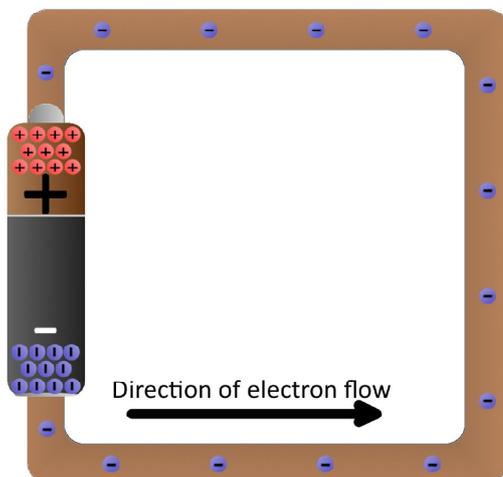
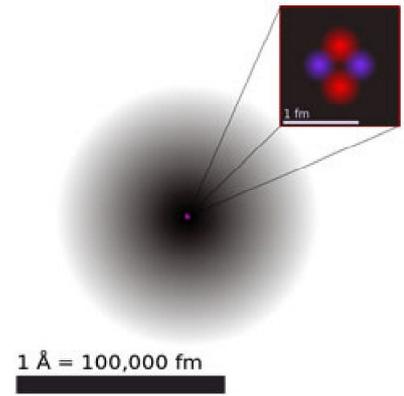
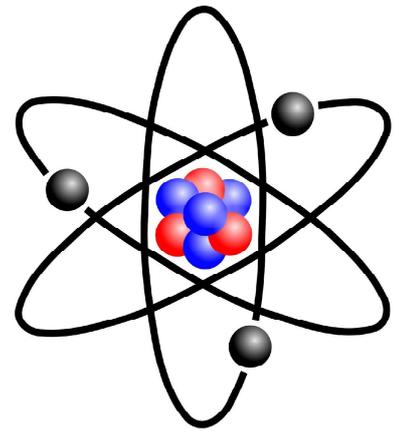
- (i) Melachot on Shabbat
- (a) Connecting/breaking an electrical circuit
 - (b) Time switches
 - (c) Use of filament/fluorescent /LED lights; other light generation (e.g. chemical)
 - (d) Electrical heating/cooking - microwaves, solar heaters, central heating
 - (e) Cellphones and computers
 - (f) Hearing aids/microphones
 - (g) Electronic keys - hotels, student accommodation
 - (h) Electronic security equipment - metal detectors, cameras, motion sensors
 - (i) Automatic doors, bells and chimes
 - (j) Shabbat elevators
 - (k) Dishwashers
 - (l) Medical monitoring
 - (m) Radio/screens
 - (n) Watches
- (ii) Light for Mitzvot
- (a) Ner Shabbat
 - (b) Ner Havdala
 - (c) Ner Chanukah
 - (d) Bedikat Chametz
- (iii) Electrical Power
- (a) Baking matzot
 - (b) Making tzitzit
 - (c) Shaving
 - (d) Filling a mikva
- (iv) Electronic Media
- (a) Use of microphones for mitzvot of speech/hearing - berachot, megilla, shofar, kiddushin, kinyanim
 - (b) Erasing Shem Hashem stored or displayed electronically
 - (c) Kol isha through a microphone
 - (d) Accepting witness testimony through telephone/video
 - (e) Bikur cholim/ nichum aveilim on the telephone
 - (f) Issurim via TV/video - e.g. pritzut
- (v) Kashrut
- (a) Kashering meat/liver using an electric element
 - (b) Kashering electric appliances
 - (c) Cooking meat and milk using electrically generated heat
 - (d) Tevilat kelim for electrical appliances

1. For further reading see: The Use of Electricity on Shabbat and Yom Tov - R. Michael Brody and R. Howard Jachter - Journal of Halacha and Contemporary Society - Vol. XXI p.4; Encyclopedia Talmudit Vol. 8 155-190 and 641-772; The Blessing of Eliyahu (pub. Golders Green B.H. 1982) pp. 197-210; Shabbat and Electricity - R. L.Y. Halperin (1993 - Feldheim); Shabbat and the Modern Kitchen - R. L.Y. Halperin (1995- Feldheim).

B] WHAT IS ELECTRICITY?

All matter is made up of atoms. Atoms are made up of two basic parts - (i) a tiny nucleus made from smaller particles - protons, which have a positive charge, and neutrons; (ii) electrons which have a negative charge. The electrons spin extremely fast around the nucleus in various different orbits forming shells of different layers of electrons - effectively an 'electron cloud'.

In some elements the electrons spinning in the outer shells most distant from the nucleus can become more easily detached, forming a kind of 'electron soup'. In those elements, the application of an electric charge will cause the electrons to vibrate and move, sending a wave of energy through the material. This is electricity. The electrons themselves move rather slowly, although the energy wave moves at immense speed. This is somewhat similar to sound waves which are caused by vibrating air molecules. The sound waves pass very quickly through the air, although the air molecules themselves hardly move. As such, the electricity is not like water passing through an empty pipe but more like a pipe pre-filled with water. If the water is pressed at one end, water will splash out of the other. In electricity, this pressure is called voltage.



from <http://www.mrsciguy.com/Physics/CurrentElectricity.html>

C] ELECTRICITY ON SHABBAT - BASICS

- Any discussion of the halachic status of electricity on Shabbat must distinguish between four separate issues: (i) turning on; (ii) turning off; (iii) turning up; (iv) turning down.

- A fundamental distinction must be made between (i) activating/deactivating the electricity itself and (ii) activating/deactivating the appliance being powered by the electricity. That activity may (independent of the issue of electricity per se) be a melacha on Shabbat e.g. lights, ovens, drills, power saws, milking machines, typewriters, washing machines, food processors, lawn mowers, shavers, sewing machines, bread makers. However, other activities may not intrinsically involve any of the 39 melachot e.g. radios, fans. In such circumstances, the question will then focus significantly on the halachic status of the electrical circuit itself.

- Various principles in hilchot Shabbat could be relevant, including: (i) Whether the electrical activity is intended - דבר שאינו מתכוון. (ii) Whether the activity is carried out immediately or indirectly with a time delay - גרמא. (iii) Whether the final result is momentary or lasting - אינו מתקיים. (iv) Whether the activity is being carried out in an unusual manner - שינוי. (v) Issue of muktza. (vi) Whether the activity, even if not technically prohibited, is inappropriate for Shabbat - זילותא דשבתא. (vii) Whether there is any ma'arit ayin. (ix) Whether there is a broader meta-halachic or hashkafic value that is at risk by permitting (or not permitting) use of an electric item.

- A distinction must also be made between Shabbat and Yom Tov.

D] USE OF INCANDESCENT BULBS ON SHABBAT

A filament light bulb works by passing electric current through a thin metal filament which heats up and then glows.



D1] TURNING ON A FILAMENT BULB

1. תני א"ר יהודה עששות של ברזל היו מרתיחין אותן מעויה"כ ומטילין לתוך הצונין כדי שתפיג צינתן. ולא נמצא כמכבה ביוה"כ! אלא ... ר' יודה סבר מימר שאין תולדת אש כאש, ורבנן סברין מימר תולדת אש כאש

תלמוד ירושלמי יומא פרק ג הלכה ה

The Cohanim needed to obtain hot water on Yom Kippur for the tevila of the Cohen Gadol. One possible way to heat water was to heat up iron bars before Yom Kippur and then put them in water on Yom Kippur itself. The Gemara eventually rejects this as being prohibited, but in so doing classifies the heating of metal as 'toldat aish' - a derivative of the melacha of 'mavir' - creating a flame.

2. בישול פתילה הוא וא"ר ששת מה לי בישול פתילה, מה לי בישול סמנין!

יבמות ו:

A different Gemara categorizes heating metal as 'bishul' - 'cooking' the metal.

3. המחמם את הברזל כדי לצרפו במים הרי זה תולדת מבעיר וחייב

רמבם הל' שבת יב"א

The Rambam rules that heating metal is mavir - burning.

4. א"א : ולמה לא משום מזשל?!

ראב"ד שם

The Ravad immediately asks on the Rambam - why not bishul?

5. המתוך אחד ממייני מתכות כל שהוא או המחמם את המתכת עד שתעשה גחלת הרי זה תולדת מבשל,

רמב"ם הלכות שבת פרק ט הלכה ו

The Rambam himself rules elsewhere that heating and softening metal is a prohibition of bishul!

6. ... וצפי"צ כתב דהמחמם את הברזל כדי לצרפו במים ה"ז תולדת מצעיר! וחירץ זלח"מ דתרתו איתגבו - דמתחלה כשנעשה ברזל רך חייב משום מזשל, ואח"כ כשנעשה גחלת צוערת חייב משום מצעיר שכרי נעשה דבר השורף

שער הציון שיח"א

The Mishna Berura explains that the Rambam in fact rules that there are two melachot involved in heating metal. When the metal gets hot and softens slightly there will be bishul and when the metal glows there will be mavir.²

In any event, the halachic consensus is that turning on a filament light on Shabbat is a Torah prohibition.³

2. The Chazon Ish (O.C. 50:9) has an alternative understanding of the Rambam. According to him, it depends on a person's intention when heating the metal. If their intention was to soften the metal (e.g. to work it) then the melacha is bishul. If the intention was to heat the metal to temper it, the melacha is mavir. In either case the Ravad rules that it is bishul. The Chazon Ish then asks what the Rambam would rule if the person's intention is neither softening or heating the metal, but making light? Would it still be bishul according to the Ravad and mavir according to the Rambam? Additionally - (i) can a substance be considered to be 'burning' if nothing is being consumed? (ii) If the prohibition is bishul - softening the metal - is this a desired side effect. If not why is this not considered a ליה ניחא ליה?

3. This is also the position on Yom Tov, although a number of earlier authorities ruled that turning on lights on Yom Tov was equivalent to lighting from an existing flame and thus permitted. This was based on a misunderstanding of the nature of electricity, which they understood to be 'aish' in the wires. See for example R. Yechiel Epstein (the Aruch

D2] TURNING UP A FILAMENT BULB

The halachic status of turning up an electric light will depend on the nature of the prohibition of turning it on. If the issur of turning on the light is 'bishul', do we say 'אין בישול אחר בישול' - i.e. once something is cooked, it cannot halachically be 're-cooked'. The Chazon Ish (ibid) rules that there is no such concept in bishul of non-foods. If the issur is 'mavir' then creating an extra flame will apparently also be a breach of this melacha.

As such, the consensus is that that turning UP a filament light on Shabbat is a Torah prohibition.

D3] TURNING OFF/DOWN A FILAMENT BULB

7. והאמר שמואל - מכבין גחלת של מתכת ברשות הרבים בשביל שלא יזוקו בה רבים, אבל לא גחלת של עץ. ואי סלקא דעתך סבר לה כרבי שמעון אפילו של עץ נמי ... (רש"י: - דהא לר' שמעון מלאכה שאינה לריכה לגופה פטור עליה. וכל כיצוי אינו לריך לגופו חוץ מעושי פחמין או מכצבצי פתילה)

שבת מב.

In hilchot Shabbat there is a concept of 'melacha she'eina tzericha legufa'. That means a melacha which is performed on Shabbat in the normal way, but for a purpose with an agenda which is different to the original purpose/agenda of that melacha in the Mishkan.⁴ The purpose in the Mishkan for the melacha of 'mechabeh' - extinguishing - was to make charcoal to use in the preparation of dyes. If one extinguishes for any other reason, this will be an issur derabbanan.

Based on this, R. David Zvi Hoffman⁵ ruled that turning filament lights off or down is an issur derabbanan on Shabbat. There are other authorities who held that the prohibition is in fact min haTorah, but the general consensus is like R. Hoffman.

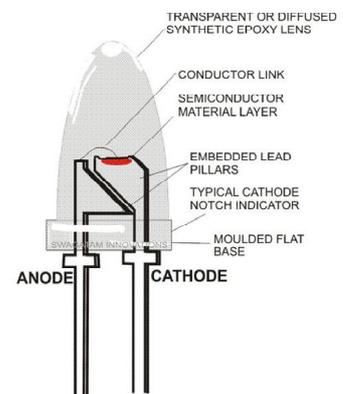
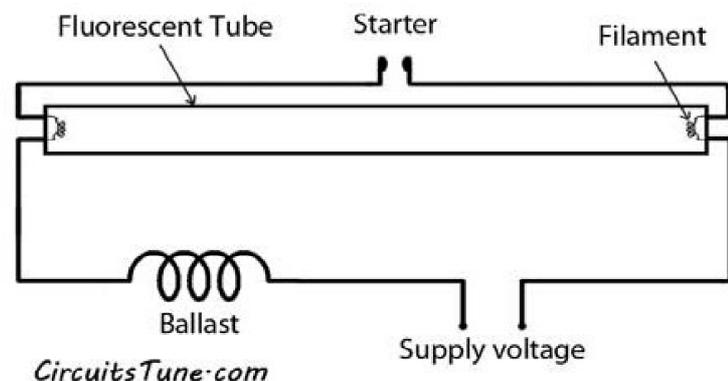
As such, the consensus appears to be that that turning DOWN/OFF a filament light on Shabbat is a Rabbinic prohibition.⁶

E] USE OF NON-INCANDESCENT BULBS ON SHABBAT

Today, many lights do not work as filament bulbs e.g. fluorescent lights or LEDs, which create 'cold' light by exciting gases to glow. There is no prohibition *per se* to create light and the halachic permissibility of the use of other types of light will depend on the halachic status of electricity generally - see below.

- Fluorescent lights (available since 1939) work differently. The metal tube contains an inert gas - usually Argon. In a hot-cathode lamp there are small specially-coated metal filaments at each end which give off electrons when heated. This creates a high-voltage pulse through the tube which creates an arc of UV radiation. This in turn hits the phosphorous coating on the inside of the bulb which then glows. Some old style fluorescent lights had a starter which created a spark to ignite the gas. These would be prohibited min haTorah as in D above.

- LEDs are different again. They create light by electroluminescence in a semiconductor material. Electroluminescence is the phenomenon of a material emitting light when electric current or an electric field is passed through it - this happens when electrons are sent through the material and fill electron holes. An electron hole exists where an atom lacks electrons (negatively charged) and therefore has a positive charge. As electrons pass through one crystal to the other they fill electron holes. They emit photons (light).



INTERNAL COMPOSITION OF A LED

HaShulchan) writing in article published in Beit Vaad LeChachamim 1903 part 1. This position was refuted strongly by R' Chaim Ozer Grodzinsky (Achiezer 3:60) and R. Shlomo Zalman Auerbach (Meorei HaAish 1). All poskim agree today that turning on lights on Yom Tov is prohibited.

4. For example, the melacha of 'boneh' prohibits digging a hole in the ground to lay a foundation. This is an issur min haTorah. But if one digs the same hole, not for the purpose of laying a foundation but to get a bag of dirt, this is not the Torah melacha and is prohibited only rabbinically.

5. Sh'ut Melamed Lehoil O.C. 49 - early 20C Germany.

6. Subject to the more general question of whether turning off an electrical circuit could be a Torah prohibition - see below.

F] CONNECTING ELECTRICAL CIRCUITS ON SHABBAT

Whilst the issues dealt with above - turning on and off lights - have clear sources in Chazal who discussed heating and extinguishing metal, the use of 'pure electricity' i.e. connecting and disconnecting circuits does not have any obvious source in the Gemara. Today, the halachic treatment of electricity is dealt with in a number of ways:

- מוליד - molid: "creating"
- בונה - boneh: "building"
- מכה בפטיש - makeh bepatish: "finishing an item"
- creating sparks
- increasing fuel consumption at the power station
- בישול - bishul: "cooking" - heating wires (even if not glowing)
- מנהג - minhag: "tradition"

F1] MOLID - 'CREATING'

8. ... בדן אם רשאים לדבר בשבת ע"י מכונה הנקראת טעלפון. והנה לפע"ד יש איסור בדבר ושומר נפשו ירחק מזה. כי מלבד מה שמוכרח המדבר במכונה כזאת להכות מקודם בפעמון עת ירצה לדבר וזה אסור משום משמיע קול יש לאסור עוד משום דע"י סגירת זרם העלעקטרי נולד כח עלעקטרי וזה אסור בשבת דכמו בסחופא כסא אשיראי אמרינן בביצה כ"ג דאסור משום דמוליד ריחא ה"ה דאסור לעשות עלעקטרישע פערבינדונג בשבת ומה"ט לדעתנו יש לאסור לעשות זאדאוואססער בשבת משום דגם שמה מוליד הרכבה חמית [חעמישע פערבינדונג]

שו"ת בית יצחק יורה דעה, חלק ב', מפתחות והגהות שבסוף הספר - השמטות לסימן לא

The Beit Yitzchak⁷ - R. Yitzchak Schmelkes (late 19C, Poland) - sees in the creation of a circuit a parallel action to the Gemara's prohibition of introducing scent into a cloth on Shabbat - molid.

9. רבה ורב יוסף דאמרי תרוייהו סחופי כסא אשיראי ביומא טבא אסור. מאי טעמא? משום דקמוליד ריחא. ומאי שנא ממוללו ומריח בו וקוטמו ומריח בו? התם ריחא מיהא איתא ואוסופי הוא דקא מוסיף ריחא, הכא אולודי הוא דקמוליד ריחא (רש"י - נכנס צהרם שלא היה בו ריח. ואסור מדרבנן שהמוליד דבר חדש קרוי כח לטעם מלאכה חדש)

ביצה כג. ורש"י שם

The Gemara states that crushing sweet-smelling wood sticks (which are no longer attached to the ground) is permissible, as the scent is inside them and you are simply allowing it to emerge. Introducing a new scent to an object is however prohibited as 'molid' - literally 'generating'. Rashi explains that the prohibition of molid is an issur derabbanan since it involves creating something 'new', which is close to the idea of a melacha, and was therefore prohibited by Chazal.

10. הגב: ואסור לסחוף כוס מצושם על הצגדים משום דמוליד צהן ריחא

שו"ע אורח תקיאה

The Shulchan Aruch rules the issur of creating scent. But is there is an equivalent issur of increasing the scent?

11. ואסור לסחוף. ואע"ג דמותר למלול עשבים כמ"ש ... דהתם ריחא מיהא איתא ואוסופי היא דקמוסיף. ואין להביא ראייה מכאן דצגד שמריח צבר מותר ליתן עליו צשמים שיריח יותר. דשאיני הכא שהריח הוא שם רק שמוסיפו צמלילתו שילא הריח משאי"כ צצגד דמ"מ מוסיף ריח חדש. ומ"מ אחרוג שהי' מונח מעי"ט על הצגד ונטלו מותר להחזירו צי"ט דאינו מריח יותר צצגד כ"כ (עסי' תרל"ח)

מגן אברהם תקיאה

The Magen Avraham explains that added extra scent is not like crushing the top of the stick. In that case, the scent was already there. Adding extra scent is however still molid in that it is creating a new material. The Magen Avraham also writes that it is still permitted to return an etrog to a cloth on which it was resting before Yom Tov. Even though this will inevitably revive the smell of the etrog, the Magen Avraham understands that this is NOT considered adding new smell.⁸

12. ואם כבר היה מונח מין בושם זה על בגד זה בענין שכבר נכנס ריח הבושם בבגד מותר להניח עליו ביום טוב עוד ממין בושם זה כדי להוסיף ריח בושם זה בבגד. אבל אסור להניח עליו מין בושם אחר שהרי הוא מוליד ריח חדש בבגד ביום טוב.

שולחן ערוך הרב אורח חיים סימן תקיאה

This approach is explicitly supported by the Shulchan Aruch Harav which rules that one is permitted to add more of the SAME smell to a cloth, but is not allowed to add NEW smell.

7. R. Yitzchak Schmelkes (late 19C, Poland).

8. Presumably because it is simply adding more of the SAME smell, rather than a different smell.

On that basis, it is not clear that ADDING more current to the system would be prohibited under the rubric of molid.⁹

A number of objections to the comparison of electricity to molid of were raised by R. Shlomo Zalman Auerbach in his teshuvot, Minchat Shlomo, including the following:-

- 'derech tashmisho'. This is the general principle that the prohibition of creating or making something will not be transgressed if it in the manner or 'normal use' rather than creation. e.g. putting the lid on and taking it off a pot is not considered destroying and making a kli, since this is considered normal usage. Closing/opening a door or window is not binyan/stira since this is considered normal usage.
- can there be a molid if the substance introduced cannot be sensed? Is electricity 'sensed'?¹⁰
- can we today invent new types of molid other than those specified by Chazal. For example, the Chacham Tzvi (#92) in his discussion of molid restricts it to introducing scent to clothes. Furthermore, we do not see any halachic prohibition of molid in the introduction of other energy forms e.g. heat, sound¹¹. Other poskim¹² understand that the nature of the generic issur of molid is to prohibit any activity which is 'karov lemelacha'.

F2] BONEH - 'BUILDING'

13.

... דהמדליק נר החשמל בשבת, ... יש בזה משום תיקון מנא כיון שמעמידו על תכונתו לזרום את זרם החשמל בתמידות, וקרוב הדבר דזה בונה מה"ת, כעושה בלי, וכשי"כ כאן שכל החוסיין מחוברין לבית והו"ל כבונה במחובר ואין כאן משום אין בנין בכלים אלא דינו כמחובר דיש בו משום בנין וסתירה אבל הכא אין נפקותא בזה דאפי' בכלים כה"ג חשיב בונה.

... ובפתיחת החשמל שמכניסים, הזרם בהחוסין חשיב לעולם כחקע דאף את"ל דקנה של סיידין אף בתקע אינו אלא מדרבנן, היינו דוקא בהרכבה של ב' גשמים שאפשר לחשבן כשנים משתתפין בסעולה אחת אין התקעה מכרעתן לגשם אחד כל שמירוקן נחוצ לטיח של הנמוך, אבל תיקון צורה להגשם ונעשה ע"י זה שימוש, ודאי חשיב בונה, ואף אם השימוש הוא לשעות מיוחדות ואח"כ פוסקו, דהפסיקה הוא מכאן ולהבא והצורה הראשונה אינה בת פירוד מן הגשם, וכשי"כ אם גם בקנה של סיידין חייב כשתקע דהכא חייב אפי' דפוסקו לאחר שעה, ואחרי שהולקה הוא בנין, הכיבוי הוא סותר.

חזון איש אורח הל' שבת נ"ט

The Chazon Ish understands that connecting an electrical circuit is the melacha of 'boneh' and disconnecting will be 'soter'. Both of these prohibitions are min haTorah! The analogy to boneh is as follows:- boneh means the combination of two separate parts into a new functional unit. For example wall + nail = hook. So too, the Chazon Ish viewed the connection of a circuit as the combination of two previously unusable materials (wire + electrical energy) into a new functional unit (electrified wire). This is also referred to as being מתקן צורה לחומר - giving new form to substance, unlike the simple addition of heat.

A number of objection were raised by R. Shlomo Zalman Auerbach, including the following:-

- 'derech tashmisho' (as above) - shutting a door on a hinge is not considered 'building' but 'use'.
- the introduction of electricity to a wire is not מתקן צורה לחומר but more like introducing water into a pipe or oil into a wick. As such, there still remain two distinct items and not one new unit
- to be considered halachic 'building', both parts of the 'binyan' must be physical and capable of existing independently.
- no-one would call this 'building'.

14. דהענין תלוי בשיקול הדעת דחימום ברזל אינו מחדש טבע חדש בברזל, אלא שהחום שוכן בה לשעה והברזל מתמיד לגרשו. אבל חיבור חוט החשמל מעורר את כח החשמלי המוטבע בחוט עצמו והוא מהרכבה המזגית שבשורש יצירתו ... והעמדה על מתכונתה ע"י החיבור ... חוששין בה משום בונה משום הרכב הפרקים זה עם זה

מכתב של החזו"א להגרש"א

In correspondence between the Chazon Ish and R. Shlomo Zalman, the Chazon Ish clarified his understanding of 'boneh'. Adding heat to a wire does not transform the wire. But adding electricity creates a new entity.

9. There could be a difference between situations where the extra current causes something NEW and where it does not. For example, compare increasing the current of a radio which turns the volume from inaudible to audible, as opposed to from quieter to louder.

10. Does the fact that one can sometimes 'feel' electrical current through one's body constitute a 'sensation' for these purposes?

11. Chazal prohibited some activities on Shabbat which make sound, but not because of molid!

12. See R. Osher Weiss in Shu"t Minchat Asher 1:30.

F3] MAKEH BEPATISH - COMPLETING AN ITEM

15. כל דבר שהוא גמר מלאכה חייב עליו משום מכה בפטיש. ומפני זה הגורר כל שהוא או המתקן כלי באיזה דבר שיתקן חייב

רמב"ם הל' שבת כג:ד

One of the 39 melachot is 'makeh bepatish' - putting the final touches to an item to make it usable. By analogy, the Chazon Ish and the Tzitz Eliezer have suggested that turning on a circuit could be considered makeh bepatish, since it makes the circuit 'live'.

16. רבי יוחנן ור"ש בן לקיש עבדין הוויי בהדא פירקא תלת שנין ופלוג. אפקון מיניה ארבעין חסר אחת תולדות על כל חדא וחדא. מן דאשכחון מיסמוך סמכון, הא דלא אשכחון מסמוך עבדוניה משום מכה בפטיש

תלמוד ירושלמי (וילנא) מסכת שבת פרק ז הלכה ב

R. Osher Weiss¹³ cites a Yerushalmi which redefines how Chazal understood the concept of melachot on Shabbat. They did not simply connect activities to the 39 Melachot and, if there was no such connection, this would mean the activity was permitted. Rather, any activity which is 'chashuv' has to be a melacha. If it does not specifically connect to one of the 39 Melachot, they connected it to Makeh BePatish!

17. המפיס שחין בשבת כדי להרחיב פי המכה כדרך שהרופאין עושין שהן מתכוונין ברפואה להרחיב פי המכה הרי זה חייב משום מכה בפטיש שזו היא מלאכת הרופא

רמב"ם שבת פרק י הל' יז

Even though the implications of this approach are very novel¹⁴ there appears to be support from the Rambam who understands the prohibition on lancing boils as Makeh BePatish since it is the 'melacha of doctors'!!!

Rav Shlomo Zalman Auerbach has objected on various grounds, including that of 'derech tashmisho' (as above), and also that the makeh bepatish in this case is almost effortless and would not therefore be included in the issur.

F4] CREATING SPARKS

Some circuits (particularly DC current) create sparks when closed. Creating sparks on Shabbat is assur, according to many poskim as a derabbanan, but according to some as an issur min haTorah of creating fire.

Rav Auerbach again rejects this as a potential halachic prohibition on the following grounds:-

- **davar she'eino mitkavein**: Any secondary by-product on Shabbat which results in an unintended melacha (and which is not inevitable) is permitted. The creation of sparks is by no means inevitable (and will depend on voltage/humidity/AC/DC). It is particularly rare in solid state technology.
- **mekalkel**: the sparks are destructive since they ruin the contacts and any destructive act is derabbanan.
- **kel'achar yad**: this is not the normal way to create fire/sparks, which would also render the issur derabbanan.
- **p'sik reisha de lo nicha lei**: Even if sparks are inevitable (p'sik reisha) they are undesirable (lo nicha lei) and, if the prohibition itself is rabbinic, according to most authorities this would render them permissible.
- If there is no detectable heat or visible spark, is this considered halachic fire at all?

F5] CAUSING ADDITIONAL FUEL CONSUMPTION AT THE POWER STATION

Some poskim have suggested that turning on electrical appliances is prohibited since it causes extra fuel consumption in the power station. This potential issur is dismissed by Rav Shlomo Zalman Auerbach on the following grounds:-

- **grama**: the issur is indirect and therefore will be at most a derabbanan.
- the issur is not inevitable - someone on the grid will probably turn off an appliance as you turn one on.
- outside Israel the workers are almost certainly non-Jewish and are working on behalf of the non-Jewish majority population. (In Israel the situation is more complex and there are a significant number of people who will not use any electricity from the national grid on Shabbat).

13. Ob cit. The teshuva relates to turning on LED lights on Shabbat.

14. As R. Weiss points out in his teshuva.

F6] BISHUL - HEATING THE WIRE

The Chazon Ish says that there is a prohibition of 'bishul' when heating any solid to more than 'yad soledet bo' - around 43°C/ 109°F. Thus, if the wires reach this temperature, there will be an prohibition.

Again, Rav Shlomo Zalman Auerbach objects on various grounds:-

- most poskim disagree with the Chazon Ish and rule that the prohibition of bishul in a solid applies only when it 'cooks' and not at 'yad soledet bo'. In the case of metals, this will be when the metal gets soft.¹⁵
- there is often no significant heating in modern appliances.
- even if the wires do heat to 43°C and such heating is considered to be bishul, the melacha is unintended and undesirable, and therefore will be a 'p'sik reisha de lo nicha lei' - see above.

F7] ACCEPTED HALACHIC TRADITION

18. **נתבאר** לפי זה דלענ"ד נראה דבכה"ג דלא עשה כלל שום הדלקה או כיבוי כי אם מחבר רק את הטלפון עם הזרם אין לאסור בשבת ויו"ט, לא משום מכה בפטיש ולא משום מוליד. (אך חושבני שהמון העם אינו יודע כלל להבחין בכך ויכול לטעות ע"י זה לומר שמותר גם להדליק ולכבות את החשמל בשבת, ולכן אף לדין אין להתיר דבר זה כי אם במקום צורך גדול (...). אך מה אעשה שכבר הורה זקן והוא הגאון מוהר"י שמעלקיש ז"ל בשו"ת בית יצחק (יו"ד ח"ב סי' ל"א) בהשמטות על דבר הטלפון אם מותר לדבר בו בשבת, ובתוך דבריו כתב שם: "דכמו בסחופא כסא אשיראי אמרינן בביצה כ"ג דאסור משום דמוליד ריחא ה"ה דאסור לעשות עלעקטרושע פארבינדונג בשבת" עכ"ל. והדבר צריך הכרעה (... עיי"ש דהאי גאון ז"ל כתב נמי "לדעתי יש לאסור לעשות זאדאווססער (מי סודה) בשבת משום דגם שמה מוליד הרכבה חימית", ואפ"ה למעשה רבים מקילים בזה)

שו"ת מנחת שלמה חלק א סימן ט ד"ה נתבאר לפי

R. Shlomo Zalman Auerbach concludes that it is not clear to him why the simple connection of an electrical circuit on Shabbat should be prohibited (assuming that there is no heat generated or other consequent prohibitions caused). Nevertheless, the clear halachic minhag of the Jewish community is NOT to use electricity for the reason of the Beit Yitzchak - that there is an issur derabbanan of molid. Furthermore, since many uses of electricity are clearly prohibited min haTorah (e.g. turning on filament light bulbs), people should certainly refrain from using any electricity on Shabbat to avoid confusion and potential chilul Shabbat

As such, the consensus appears to be that turning on an electrical circuit (other than lights/heaters) is a Rabbinic prohibition.¹⁶ However, many poskim take the view of the Chazon Ish into serious consideration and will be concerned that the use of electricity on Shabbat could be min haTorah.

G] DISCONNECTING ELECTRICAL CIRCUITS ON SHABBAT

The reasoning in F2 (סותר), F4 and F7 above could apply.

H] INCREASING CURRENT ON SHABBAT

The reasoning in F1, F3, F5, F6 and F7 above could apply. Based on the analysis above, it is not clear that *molid* can be used as model to prohibit increasing current.

I] DECREASING CURRENT ON SHABBAT

The reasoning in F7 above could apply.

In Part 2 we will iy'H look more specifically into the issue of microphones and hearing aids on Shabbat.

15. See Rambam Hilchot Shabbat 9:6 and source above.

16. This will be of practical relevance in cases of significant need or loss, in cases of illness (eg hospitals) or security (eg army/police).