Explanatory Statements – The Theory of Why

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What is an Explanation?
An explanatory statement is a compound statement that presents a justification (a reason) for the truth of an assertion or a denial. For example:

(1) Humility is good because it is the result of straight reason.
(2) Since humility is the result of straight reason, therefore humility is good, (reversal of the order of the clauses of the statement)

These statements assert that the fact that humility is the result of straight reason is a justification for the fact that humility is good.

If we have an explanatory statement ‘A because B’ or ‘since B therefore A’ then we say that B is a reason or justification or grounds for A. An explanatory statement has the following parts:

• the main clause – the clause that presents the assertion or denial. It is called the explanandum.
• the explanatory clause – the clause that offers the justification or reason for the truth of the main clause. It is called the explanans, and it answers the question WHY.

Explanatory statements cannot be modeled in modern formal logic for two reasons:

• The FOPL conditional statement ‘B ⊃ A’ does not capture the explanatory nature of the explanatory connection, it only expresses the fact that the truth of B ‘materially’ implies the truth of A. For example, if A = fire is hot and B = ‘1+1 equals 2’, then B ⊃ A is true but A because B is false.
• The ‘because’ connective is referentially opaque. Even if statement B is necessarily equivalent to statement C, the two explanatory statements ‘A because B’ and ‘A because C’ may have different truth values.

Every explanatory statement generates a syllogism. For the example above:

Everything that is the result of straight reason is good.
Humility is the result of straight reason.
∴ Humility is good.

Explanations in Biblical Hebrew
The Hebrew word הקיה (ki) has four meanings, one of which, הקיה, is to introduce a reason for a previously mentioned statement.

In Rashi HaShana 3a:
אמר רבי כמעשינו ריבועים ואילו לא זמא

Reish Lakish said: The Hebrew word ki is used in the Bible in four senses: if, perhaps, but, and because.

Example of Ki – Rosh HaShana 3a
(ToolStrip 'ki

“And all the congregation saw that [ki] Aaron was dead, and they wept for Aaron thirty days, all the house of Israel” (Numbers 20:29). About this, Rabbi Abahu said: Do not read the verse as: “And they saw [wayeira]”; rather, read it as: “And they were seen [wayneira]’i” by others, because the cover of the clouds of glory had been removed from them. And the next word, “that [ki],” should be understood as meaning because, like the statement of Reish Lakish. Therefore, the verse should be understood as follows:

(3) And all the congregation was seen, i.e., revealed, because [ki] Aaron had died.

Here the simple meaning (the psihat) of the word ki in this pasuk is an introduction to a sentential complement ‘that Aaron had died’ that provides an answer to the question ‘What did the congregation see?’

Rabbi Abahu however interprets this ki (a drasha) as an introduction to an explanatory clause that answers the question ‘Why was the congregation seen, i.e. revealed?’ Because the cover of the clouds of glory had been removed from them. And why was that the case?” with the answer ‘because Aaron had died’.

Subject-Dependent Explanation: the Ramchal’s 24 Logical Aspects
Rabbi Moshe Chaim Luzzatto writes in the Supplement to Sefer HaHagugavon, called the K’nes Hekeshim, an analysis of explanatory statements using the 21 technical terms of logic. In Chapter 11 of Sefer Derech Tzuros, the Ramchal presents 24 logical aspects (havchamos), that can be used for delineating topics:

Essence, Parts, Quality, Quantity, Material, Form, Action, Consequence, Genus and Species, Cause, Means, Motivation, Purpose, Result, Attribute, Location, Position, Movement, Time, Relation, Subject, Comparison, Difference, Contrast

For explanations where the explanatory factor is simple an aspect of the subject, the explanatory statement has the following form:

(4) M has-property Z
because (R of M) has-property Y

Where subject (R of M) of the explanatory clause is a relational correlative of the subject of the main clause, using the relationship R from among the 24 logical aspects.

For example:

(5) Humility is good because its CAUSE is straight reason.
(6) Learning Torah is good because its SPECIES is actions that are fulfillment of a Torah commandment.
(7) Learning Torah is good because its RESULT is good action.

Example of Subject-Dependent Explanatory Statements – Shabbos 111b
Rav Acharav said, brother of Mar Acha, raised a dilemma: Is it permitted to tie a bow tightly on Shabbos, according to Rabbi Meir? Is the reason for the opinion of Rabbi Meir that because one can untie the knot with one hand, it is not considered a permanent knot (even if he intended it to be permanent – Rashi), and this bow too, he can untie it with one hand and therefore he would not be liable for tying on Shabbos? Or perhaps the reason for the opinion of Rabbi Meir is because typically a knot that can be untied with one hand is not particularly tight, and this bow is tight and therefore it is prohibited to tie it on Shabbos. The Gemara concludes: Let it stand unresolved.

According to the first side of the dilemma, (8) A knot that one can untie with one hand has the property that one who ties it on Shabbos is not liable because the knot has the property that one can untie it with one hand.

According to the second side, the qualification stated by Rabbi Meir is only a siman, not a teuma.
(9) A knot that one can untie with one hand has the property that one who ties it on Shabbos is not liable because its QUALITY is lack of tightness.

Relational Explanatory Statements
Besides statements where the predicate is a simple property of the subject, such as ‘humility is good’, we also have relational statements of the form

(10) M has-property (R of N)
where the predicate is composed of a relational term R and a correlate term N.

In the case of a relational main clause where the explanation depends solely upon the correlate:

(11) M has-property (R of N)
because N has-property Y
then we can rewrite the main clause so that its subject is the correlate as follows:

(12) N has the property that M has-property (R of N)
because N has-property Y

However, if the explanation depends upon the relation between the subject and correlate in the main clause:

(13) M has-property (R of N)
because M has-property (Q of N)

we have a new type, a relational explanatory statement:

(14) A person cannot makidisch a stolen object because he does not own the object.

References
Sefaria. https://www.sefaria.org