4-2017

Explanatory Statements – The Theory of Why

Aharon Grenad
Touro College, alan.grenadir@touro.edu

Follow this and additional works at: https://touroscholar.touro.edu/sle_pubs

Part of the Jewish Studies Commons, and the Logic and Foundations of Mathematics Commons

Recommended Citation

This Poster is brought to you for free and open access by the School for Lifelong Education at Touro Scholar. It has been accepted for inclusion in School for Lifelong Education Publications by an authorized administrator of Touro Scholar. For more information, please contact Donneer Missouri donneer.missouri@touro.edu.
Explanatory Statements – The Theory of Why
Aharon Grenad, Touro College, Brooklyn, NY

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 A – the clause that presents the assertion or denial. It is called the explanandum.
• the explanatory clause B – 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 in 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” 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.
Therefore, humility is good.

Explanations in Biblical Hebrew

The Hebrew word קי מ is has four meanings, one of which, ויד, is to introduce a reason for a previously mentioned statement.

In Rosh HaShanah 3a:

"ראוי רל כ מפוסת רד לוונאיא איזלאמאדרא"
Reish Lakish said: The Hebrew word קי מ is used in the Bible in four senses: if, perhaps, but, and because.

Example of Ki – Rosh HaShana 3a

“וארואו הנביאים איזלאמאדרא. והא איחוי
כחייAaron had died, 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 [vayikra]” rather, read it as: “And they were seen [vayera’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 phrat) of the word קי 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 קי (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 HaHagidavon, called the K’nah Hekeshim, an analysis of explanatory statements using the 21 technical terms of logic. In Chapter 11 of Sefer Derech, Tvunos, the Ramchal presents 24 logical aspects (havachanos), 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 simply 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.

References:

Sefaria. https://www.sefaria.org

Example of Subject-Dependent Explanatory Statements – Shabbos 111b

In Rosh HaShanah 3a:

"וארוו הנביאים איזלאמאדרא. והא איחוי
כחייAaron had died, 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 [vayikra]” rather, read it as: “And they were seen [vayera’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 phrat) of the word קי 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 קי (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’.

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)

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 malkish a stolen object because he does not own the object.

Relational Explanatory Statements