Book 6: Chapter 2

Representation of Propositions of Relation

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Let us take, first, the Proposition “Some x are y”.

This, we know, is equivalent to the Proposition of Existence “Some xy exist”. Hence it may be repre- sented by the expression “xy1”.

The Converse Proposition “Some y are x” may of course be represented by the same expression, viz. “xy1”.

Similarly we may represent the three similar Pairs of Converse Propositions, viz.——

“Some x are y’” = “Some y’ are x ”,
“Some x’ are y” = “Some y are x’”,
“Some x’ are y’” = “Some y’ are x’”.

Let us take, next, the Proposition “No x are y”.

This, we know, is equivalent to the Proposition of Exist- ence “No xy exist”. Hence it may be repre- sented by the expression “xy0”.

The Converse Proposition “No y are x” may of course be represented by the same expression, viz. “xy0”.

Similarly we may represent the three similar Pairs of Converse Propositions, viz.

“No x are y’” = “No y’ are x”,
“No x’ are y” = “No y are x’”,
“No x’ are y’” = “No y’ are x’”.

Let us take, next, the Proposition “All x are y”.

Now it is evident that the Double Proposition of Existence “Some x exist and no xy’ exist” tells us that some x-Things exist, but that none of them

have the Attribute y': that is, it tells us that all of them have the Attribute y: that is it tells us that "All x are y".

Also it is evident that the expression "x1 Ü xy'0" represent this Double Proposition.

Hence it also represents the Proposition "All x are y".

[The Reader will perhaps be puzzled by the statement that the Proposition "All x are y" is equivalent to the Double Proposition "Some x exist and no xy' exist," remembering that it was stated, at p. 33, to be equivalent to the Double Pro- position "Some x are y and no x are y'" (i.e. "Some xy exist and no xy' exist"). The explanation is that the Proposition "Some xy exist" contains superfluous information. "Some x exist" is enough for our purpose.]

This expression may be written in a shorter form, "x1y'0", since each Subscript takes effect back to the beginning of the expression.

Similarly we may represent the seven similar Proposition

"All x are y'",
"All x' are y",
"All x' are y'",
"All y x",
"All y are x'",
"All y' are x",
and "All y' are x'".

[The Reader should make out all these for himself.]

It will be convenient to remember that, in translating Proposition, beginning with "All", from abstract form into subscript form, or vice versa, the Predicate changes sign (that is, changes from positive to negative, or else for negative to positive).

[Thus, the Proposition "All y are x'" becomes y1x0", where the Predicate changes from x' to x. Again, the expression "x'1y'0" becomes "All x' are y", where the Predicate changes for y' to y.].