# Book 4: Chapter 4

# Interpretation, in terms of *x* and *y*, Of Triliteral Diagram, When marked with Counters or Digits.

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The problem before us is, given a marked Triliteral Diagram, to ascertain what Propositions of Relation, in terms of x and y, are represented on it.
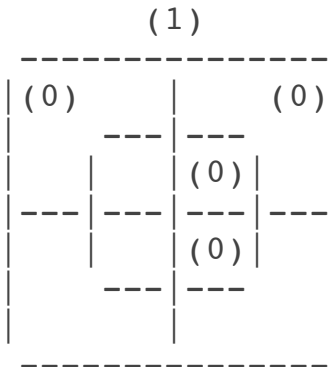
The best plan, for a beginner, is to draw a Biliteral Dia- gram alongside of it, and to transfer, from the one to the other, all the information he can. He can then read off, from the Biliteral Diagram, the required Propositions. After a little practice, he will be able to dispense with the Biliteral Diagram, and to read off the result from the Triliteral Diagram itself.

To transfer the information, observe the following Rules:–

(1) Examine the N.W. Quarter of the Triliteral Dia- gram._(2) If it contains a "1", in either Cell, it is certainly occupied, and you may mark the N.W. Quarter of the Biliteral Diagram with a "1"._(3) If it contains two "0"s, one in each Cell, it is cer- tainly empty, and you may mark the N.W. Quarter of the Biliteral Diagram with a "0".
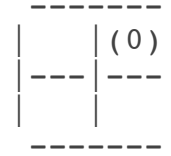
(4) Deal in the same way with the N.E., the S.W., and the S.E. Quarter.

[Let us take, as examples, the results of the four Examples worked in the previous Chapters.]

```
            (1)
    ---------------
   |(0)     |    (0)|
   |    ---|---    |
   |   |   |(0)|    |
   |---|---|---|---|
   |   |   |(0)|    |
   |    ---|---    |
   |   |   |   |
   |   |   |   |
    ---------------
```

In the N.W. Quarter, only one of the two Cells is marked as empty: so we do not know whether the N.W. Quarter of the Biliteral Diagram is occupied or empty: so we cannot mark it.
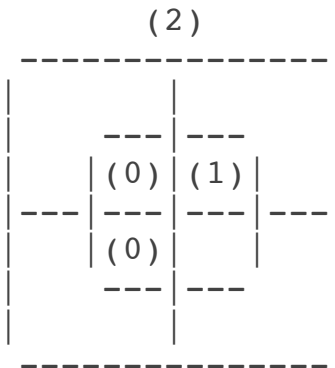
```
In the N.E. Quarter, we find two "0"s: so          -------
this Quarter is certainly empty; and we mark it    |   |(0)|
so on the Biliteral Diagram.                       |---|---|
                                                   |   |   |
In the S.W. Quarter, we have no information at all. -------
```
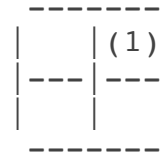
In the S.E. Quarter, we have not enough to use.

We may read off the result as "No x are y'", or "No y are x," whichever we prefer.

```
                  (2)
        ---------------
       |       |       |
       |    ---|---    |
       |   |(0)|(1)|   |
       |---|---|---|---|
       |   |(0)|   |   |
       |    ---|---    |
       |       |       |
        ---------------
```

In the N.W. Quarter, we have not enough information to use.

```
                                                   -------
    In the N.E. Quarter, we find a "1".  This shows |   |(1)|
   us that it is occupied: so we may mark the N.E.  |---|---|
   Quarter on the Biliteral Diagram with a "1".     |   |   |
                                                   -------
```
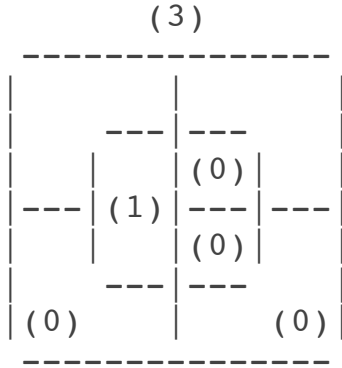
In the S.W. Quarter, we have not enough information to use.

In the S.E. Quarter, we have none at all.

We may read off the result as "Some x are y'", or "Some y' are x", whichever we prefer.

```
                   (3)
           ---------------
          |       |       |
          |    ---|---    |
          |   |   |(0)|   |
          |---|(1)|---|---|
          |   |   |(0)|   |
          |    ---|---    |
          |(0)    |    (0)|
           ---------------
```
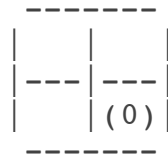
In the N.W. Quarter, we have no information. (The "1", sitting on the
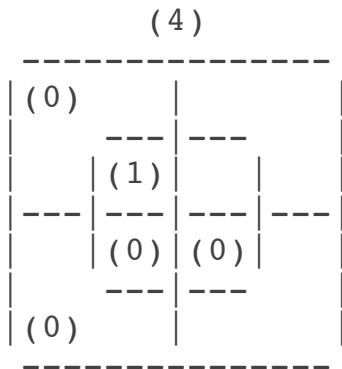fence, is of no use to us until we know on which side he means to jump
down!)

In the N.E. Quarter, we have not enough information to use.
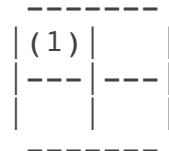
Neither have we in the S.W. Quarter.

```
The S.E. Quarter is the only one that yields enough     -------
information to use.  It is certainly empty: so we      |   |   |
mark it as such on the Biliteral Diagram.              |---|---|
                                                       |   |(0)|
                                                        -------
```

We may read off the results as "No x' are y'", or "No y' are x'",
whichever we prefer.

```
                   (4)
           ---------------
          |(0)    |       |
          |    ---|---    |
          |   |(1)|   |   |
          |---|---|---|---|
          |   |(0)|(0)|   |
          |    ---|---    |
          |(0)    |       |
           ---------------
```

```
The N.W. Quarter is occupied, in spite of the "0"      -------
in the Outer Cell.  So we mark it with a "1" on       |(1)|   |
the Biliteral Diagram.                                |---|---|
                                                      |   |   |
                                                       -------
```
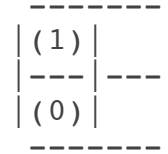
```
The N.E. Quarter yields no information.                -------
                                                      |(1)|   |
The S.W. Quarter is certainly empty.  So we mark      |---|---|
it as such on the Biliteral Diagram.                  |(0)|   |
                                                       -------
```

The S.E. Quarter does not yield enough information to use.

We read of the result as "Ally are x."]