Fall 2008 Mondays, Wednesdays, Fridays: 9am - 9:50am

Identity Theory Jigsaw Lesson Workgroup: At Most

I. Examine the following translations:

- 1. At most one person is Michael's assistant.
- 2. At most two people are Michael's assistants.

$$(\mathbf{x})(\mathbf{y})(\mathbf{z})[(\mathbf{A}\mathbf{x}\mathbf{m} \bullet \mathbf{A}\mathbf{y}\mathbf{m} \bullet \mathbf{A}\mathbf{z}\mathbf{m}) \supset (\mathbf{x}=\mathbf{y} \lor \mathbf{x}=\mathbf{z} \lor \mathbf{y}=\mathbf{z})]$$

3. At most two persons invented the airplane.

$$(x)(y)(z)[(Px \bullet Ix \bullet Py \bullet Iy \bullet Pz \bullet Iz) \supset (x=y \lor x=z \lor y=z)]$$

4. Some people like Angela, but at most two.

$$(\exists x)Lxa \bullet (x)(y)(z)[(Lxa \bullet Lya \bullet Lza) \supset (x=y \lor x=z \lor y=z)]$$

Notice that 'at most' statements make no existential commitments.

II. Try these:

- 5. There is at most one applicant for the job. (Ax)
- 6. There are at most two applicants for the job.
- 7. There are at most three applicants for the job.

Philosophy 240: Symbolic Logic Fall 2008 Mondays, Wednesdays, Fridays: 9am - 9:50am

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I. Examine the following translations:

- 1. At most one person is Michael's assistant. $(x)(y)[(Axm \bullet Aym) \supset x=y]$
- 2. At most two people are Michael's assistants.

 $(\mathbf{x})(\mathbf{y})(\mathbf{z})[(\mathbf{A}\mathbf{x}\mathbf{m} \bullet \mathbf{A}\mathbf{y}\mathbf{m} \bullet \mathbf{A}\mathbf{z}\mathbf{m}) \supset (\mathbf{x}=\mathbf{y} \lor \mathbf{x}=\mathbf{z} \lor \mathbf{y}=\mathbf{z})]$

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$$(\mathbf{x})(\mathbf{y})(\mathbf{z})[(\mathbf{Px} \bullet \mathbf{Ix} \bullet \mathbf{Py} \bullet \mathbf{Iy} \bullet \mathbf{Pz} \bullet \mathbf{Iz}) \supset (\mathbf{x}=\mathbf{y} \lor \mathbf{x}=\mathbf{z} \lor \mathbf{y}=\mathbf{z})]$$

4. Some people like Angela, but at most two.

 $(\exists x)Lxa \bullet (x)(y)(z)[(Lxa \bullet Lya \bullet Lza) \supset (x=y \lor x=z \lor y=z)]$

Notice that 'at most' statements make no existential commitments.

II. Try these:

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 $(x)(y)[(Axm \bullet Aym) \supset x=y]$

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