

Baronett's *Logic* (4th ed.)
Section Tips

Chapter 9: Four Tips

9A Translating Ordinary Language

- Categorical and truth-functional statements combine to form the statements of predicate logic:
 - Universal claims are denoted by (x) , (y) , or (z) . These refer to “all x ,” “all y ” or “all z .”
 - Particular claims are called existential claims. These are denoted by $(\exists x)$, $(\exists y)$, or $(\exists z)$. These refer to “there exists an x ,” “there exists a y ,” or “there exists a z .”
- Putting your understanding of truth-functional notation together with your new understanding of quantificational notation, you get the following symbolization:
 - “All S are P ” becomes, $(x)(Sx \supset Px)$
“For all things x , if it's S , then it's P .”
 - “No S are P ” becomes, $(x)(Sx \supset \sim Px)$
“For all things x , if it's S , then it's not P .”
 - “Some S are P ” becomes, $(\exists x)(Sx \cdot Px)$
“There is an x that's both S and P .”
 - “Some S are not P ” becomes, $(\exists x)(Sx \cdot \sim Px)$
“There is an x that's an S but not a P .”

9B Four New Rules of Inference

- Predicate logic requires additional rules that allow for the introduction or removal of universal and existential quantifiers:
 - UI says that, since, for any x , if x is an S , then it's a P , it follows that, if there's an unnamed x that's an S , it's also a P .
 - UG says that, since any unnamed x that's an S is also a P , it follows that, for all x , if x is an S , then it's a P .
 - EI says that, since there is an x that's both an S and a P , it follows that this particular S , who we'll call a is also a P .
 - EG says that, since there is an unnamed x (or hypothetically named a that's an S and a P , it follows that, there exists an x that's both an S and a P .

9F Relational Predicates

- Use your knowledge of grammar to help you determine the order of individual constants in a sentence involving a relational predicate. The grammatical subject of the sentence almost always appears to the immediate right of the relational predicate: “Giselle is taller than Marie,” is a sentence about Giselle’s relation to Marie. So, Giselle is the grammatical subject. The individual constant, g , appears to the immediate right of the relational predicate, “Taller”: Tgm .