

5.7. Translation Variations: Simple Universal and Existential Sentences

1. Generic Quantifier Phrases. Our earlier quantifier examples illustrated how to translate English “everything,” “something,” and “nothing” sentences using a single predicate.

G: ___ is physical.

Everything is physical. $\forall x Gx$

Something is physical. $\exists x Gx$

Nothing is physical. $\sim \exists x Gx$

A translation variation on the generic “thing” (in “everything,” “something,” and “nothing”) is the equally featureless term “object”. So instead of “something” we can say “**some object**”; and likewise for “**every object**” and “**no object**”.

Every object is physical. $\forall x Gx$

Some object is physical. $\exists x Gx$

No object is physical. $\sim \exists x Gx$

English also appeals to **existential** “**there**,” used not to refer to a spatial location (as in “Trixie’s over there”), but simply to claim existence.

Some things are more valuable than money.¹

There are things more valuable than money.

H: ___ is more valuable than money.

There are things more valuable than money. $\exists x Hx$

¹ Note that whereas we use a plural here (“some things are”), while earlier using singular examples (“something is”), our formal language doesn’t distinguish between the two. For whether there’s one thing that’s H or more than one, there’s *at least one* – which is what our existential quantifier claims.

A variant on this places the predicate inside a relative clause.

There are things [that are **more valuable than money**]

There are things [that **travel faster than light**]

Since **negative existential** claims such as “Nothing is material” serve to deny an existential, existential “there” appears in these constructions as well.

Nothing travels faster than light.

There’s nothing [that travels faster than light].

There are no objects [which travel faster than light]

I: ___ travels faster than light

There’s nothing that travels faster than light. $\sim\exists x \text{ I}x$

Notice that in these sorts of sentences “**exist**” acts as a variant of the verb “be”.

There **are no** time gliders.

No time gliders **exist**.

Time gliders **don’t exist**.

We also use “no such thing as” to make negative existential claims.

There’s **no such thing as** ghosts.

Ghosts **don’t exist**.

Within a **negation**, “any” also expresses an existential claim.

Nothing is a time glider.

There aren’t **any** time gliders.

Other contexts where “any” acts as an existential phrase include the **antecedent of a conditional** (“If any customers show up, I’ll be surprised”) and **questions** (“Are there any questions?”).²

By contrast, when “any” appears outside such an unusual context, it acts as a variant on “every”.

Every object is physical.
Any object is physical.

“All” is another variant on “every”.

All objects are physical.

2. Domain-Specific Quantifier Phrases. Beyond the generic quantifier phrases listed above, English offers quantifiers devoted to a single, special type of object. Most obviously, we add the special phrase “one” to quantify over **people**.

Everyone likes sushi.
Someone broke into the seafood lounge.
No one has been charged.

So when the domain of objects under discussion is understood to be people, we can translate each of these phrases into the formal language using our existing formal quantifiers.

J: ___ likes sushi **K:** ___ broke into the seafood lounge
L: ___ has been charged.

Everyone likes sushi.	$\forall x Jx$
Someone broke into the seafood lounge.	$\exists x Kx$
No one has been charged.	$\sim \exists x Lx$

² See (Larson 1995: XX) for further discussion.

We likewise quantify over people using “-body”.

Everybody likes sushi.	$\forall x Jx$
Somebody broke into the seafood lounge.	$\exists x Kx$
Nobody has been charged.	$\sim \exists x Lx$

Note that here too, “any” can act as the equivalent of “every”.

M: ___ can attend the lecture.

Anyone can attend the lecture. $\forall x Mx$

But in other contexts – such as a **negation** and the **antecedent of a conditional** – “any” acts as an **existential** quantifier.³

a: Trixie

N: ___ calls in sick **O:** ___ will fill in

G: ___ is in the bar.

If anyone calls in sick, Trixie will fill in. $(\exists x Nx \rightarrow Oa)$

There isn’t **anyone** at the bar. $\sim \exists x Gx$

A second domain meriting special English quantifiers is **places**.

H: Time gliding is legal (at place) ___

Time gliding is legal **everywhere**. $\forall x Hx$

Time gliding is legal **somewhere**. $\exists x Hx$

Nowhere is time gliding legal. $\sim \exists x Hx$

(Time gliding isn’t legal **anywhere**.)

³ Here again **questions** are a third context for existential “any”: “Is there anyone at the bar?”

A third domain with special quantifiers is **times**.

I: Sushi makes a good gift (at time) __

Sushi always makes a good gift.	$\forall x \text{ I}x$
Sushi sometimes makes a good gift.	$\exists x \text{ I}x$
Sushi never makes a good gift.	$\sim \exists x \text{ I}x$

Though the phrases “every,” “everyone,” and “everywhere” act as universal quantifiers, “ever” instead acts like “any”: within the context of a **negation** or the **antecedent of a conditional**, it’s as an existential quantifier.⁴

b: Neko

I: Sushi makes a good gift (at time) __

J: __ will be delighted.

Sushi doesn’t ever make a good gift.	$\sim \exists x \text{ I}x$
If sushi ever makes a good gift, Neko will be delighted.	$(\exists x \text{ I}x \rightarrow \text{Jb})$

⁴ But “ever” (on its own) can **only** show up in these special contexts. So it’s ungrammatical in English to say, e.g., “I have ever been to Las Vegas”. See (Larson 1995: xx).

Simple Quantified Sentences: Translation Variation Summary Sheet

Generic quantifier phrases:

Everything is G	$\forall x Gx$
Something is G	$\exists x Gx$
Nothing is G	$\sim \exists x Gx$

Every object is G	$\forall x Gx$
Some object is G	$\exists x Gx$
No object is G	$\sim \exists x Gx$

All objects are I } $\forall x Gx$
Any object is I }

There are Hs
There are things which are H
There are things that are H
Hs exist

$\left. \begin{array}{l} \text{There are Hs} \\ \text{There are things which are H} \\ \text{There are things that are H} \\ \text{Hs exist} \end{array} \right\} \exists x Hx$

There are no Hs
There are no things which are H
There's nothing that's H
There aren't any Hs
There's no such thing as Hs
Hs don't exist

$\left. \begin{array}{l} \text{There are no Hs} \\ \text{There are no things which are H} \\ \text{There's nothing that's H} \\ \text{There aren't any Hs} \\ \text{There's no such thing as Hs} \\ \text{Hs don't exist} \end{array} \right\} \sim \exists x Hx$

Quantifiers for people:

Everyone is J. $\forall x Jx$
Someone is J. $\exists x Jx$
No one is J. $\sim \exists x Jx$

Everybody is J. $\forall x Jx$
Somebody is J. $\exists x Jx$
Nobody is J. $\sim \exists x Jx$

Anyone is J $\forall x Jx$
 There isn't **anyone** who's J. $\sim \exists x Jx$
If anyone is J then P $(\exists x Jx \rightarrow P)$

Quantifiers for places:

(It's) K **everywhere**. $\forall x Kx$
 (It's) K **somewhere**. $\exists x Kx$
 (It's) K **nowhere** $\sim \exists x Kx$

(It is)n't K **anywhere** $\sim \exists x Kx$
If (it's) K anywhere, then P $(\exists x Kx \rightarrow P)$

Quantifiers for times:

(It's) **always** L $\forall x Lx$
 (It's) **sometimes** L $\exists x Lx$
 (It's) **never** L $\sim \exists x Lx$

(It isn't) **ever** L $\sim \exists x Lx$
If (it's) ever L, then P $(\exists x Lx \rightarrow P)$