

John Eliot's *Logick Primer*: A bilingual English-Massachusetts logic textbook

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Doctor Logic

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OH MY GOD. I JUST FOUND A
BILINGUAL TEXTBOOK IN LOGIC
WHERE THE SECOND LANGUAGE IS
AN INDIGENOUS AMERICAN ONE!!

(Next up, to find out exactly which
one, but I have literally _never seen a
printed book_ in an indigenous
American language before.)

9:30 AM · Oct 12, 2021 · Twitter Web App

W. 438. 3rd Edition
THE
Logick Primer.

Some Logical Notions to initiate
the *INDIANS* in the know-
ledge of the Rule of Reason;
and to know how to make
use thereof.

Especially for the Instruction of
such as are Teachers
among them.

Composed by J. E. for the
use of the *Praying Indians.*

The use of this Iron Key is to
open the rich Treasury of
the holy Scriptures.

Prov. 1. 4. To give subtilty to the
simple; to the young man know-
ledge and discretion.

Printed by M. J. 1671.

Logick. Anomayag.

Logick the Rule, where
ANomayag ne kukkuhwheg, ne
by every thing, every
 nafhpe nifhnoh teag, kah nifhnoh
Speech is composed, ana-
 keketookaonk mooowamoo, kah kogáh-
lysed, or opened
 kenaanumoomoo, afuh wofhwunu-
to be known.
 moooo wahtamunak.

Of Logick three parts.
 Anomayag nifhwe chippai.

First part teach.
 1. Negonne chippai kukkuhkooto-

Eliot's Logic Primer

eth us single Notions.
 munkqun fyeumooe wahittumooafh.
Second part teach-
 2. Nahohtoeu chippai kukkuhkooto-
eth us bindingly to compose
 munkqun moappiffue moehteauunat
Notions, to make every
 wahittumoooukifh, ayimunat nifhnoh
kinde of Proposition.
 eiyane pakodtittumooonk.
Third part teach-
 3. Nifhwe chippai kukkuhkooto-
eth us to compose Proposition
 munkqun moehteauunat pakodtittu-
tions, by bonds,
 mooongafh, nafhpe moappiffuonafh,
binding words,
 kah moappiffue kuttoowongafh,
to make a Speech.
 ayimunat keketoookontamóonk.

Plan of the talk

I will:

- Introduce John Eliot and the linguistic context he was working in.
- Introduce the contents of the *Logick Primer*—vocabulary, inference patterns, and applications.
- Discuss notions of “Puritan” logic that inform this primer.
- Talk about the importance of Eliot’s work in documenting and expanding the local language and the problems that accompany his colonial approach to this work.

Eliot and his context

- Born in Widford, Hertfordshire, around 1604; matriculated in Jesus College, Cambridge, in 1618–19; graduated 1622.
- 1629: joined Rev. Thomas Hooker's school at Little Haddo, Chelmsford.
- Under Hooker's influence, Eliot took Orders in the English Church.
- 1631: Left for Boston, MA, on the Lyon, settling in Roxbury.
- 1645: Founded a Latin school at Roxbury.
- Began studying the local indigenous languages in 1644, and preached his first sermon in that language in 1646.
- Translated the New Testament (pub. 1661), and later the whole Bible (pub. 1663).
- 1666: *The Indian Grammar Begun*: the first theoretical linguistic analysis of an indigenous American language.
- 1672: *The Logick Primer*.

Reception of the *Primer*

- 1000 copies printed in 1672.
- Almost all destroyed in 1675 (in King Philip's War)
- One copy was photographed and a reprint made from the photograph in the mid 19th C.
- A newly typeset edition was made from that edition at the end of the 19th C.
- Rarely discussed in the 20th C, except by historians and linguists.
- (Eliot better known for his work in theoretical linguistics).

What language is it?

- Various called (by Eliot and later commentators), “the Indian language”, “Massachusett”, “Narragansett”, “Algonquian”.
- A member of the Eastern Algonquian family, spoken along the coastal tribes from the Canadian Maritimes down to North Carolina.
- Wôpanâak Language Reclamation Project / Wampanoag.



The contents of the *Primer*

- Definition of “logick”
- The three parts of logic
 - ① single notions
 - ② binding notions into propositions
 - ③ combining propositions into speech
 - ① syllogisms
 - ② methodical discourse
- Examples throughout.

What is logic?

Definition of “logick”, as a rule:

where by every thing, every Speech is composed, analysed or opened to be known.

Anomayag ne kukkuhwheg, ne nashpe nishnoh teag, kah nishnoh keketookaonk, moowamoo, kah kogáhkenaanumoomoo, asuh wosh-wunumoooo wahtamunak.

The three parts of logic

- ① “single notions” (*siyeumœe wahittumœash*): “God” (*God*), “created” (*ayum*), “in beginning” (*weskekutchissik*), “heaven” (*kesuk*), “earth” (*ohke*), “not formed” (*matta kukkenauuneunkquttinno*), “nothing in it” (*monteagwuninno*), “darkness” (*pohkennum*), and so on.
- ② how “bindingly to compose Notions, to make every kinde of Proposition” (*moappissue moehteauunat wahittumœukish, ayimunate nishnoh eiajne pakodtittumœonk*)
- ③ how “to compose Propositions, by bonds, binding words, to make a Speech” (*moéhteauunat pakodtittumœongash, nashpe moappissuonash, kah moappissue kuttœowongash, ayimunat keketœkontamœonk*.)
 - ① “Syllogistical, arguing” (*oggusanukœowae, wequohtóonk*).
 - ② “Large, orderly discourse” (*sepapwoaeu kohkœnumukish keketœkaongash*).

Basic notions

Basic/single notions come in pairs “which inlighten each other, & them only” (*nish wequohtoadtumooash*, & *nish webe*).

These pairs either “agree together” (*weetoooadtumooash*) or they “dissent from each other” (*chachauboomooash*).

Examples

- Agreeing or consenting pairs:
 - ▶ “subject” (*noh wadchanuk*) and “adjunct” (*nene wadchiik*),
 - ▶ “whole” (*mamusseyeuook*) and “parts” (*chaupag*).
- Dissenting pairs:
 - ▶ “more great” (*nano mohsag*) and “then that less” (*onk ne peasik*)
 - ▶ “lesser” (*nano peasik*) and “then that greater” (*onk ne mohsag*).
 - ▶ pairs that are “contraries” (*penooanittumooash*)
 - ▶ pairs that are “contradicters” (*pannoowohtoadtuash*)

Extra attention given to the pair “cause/effect”

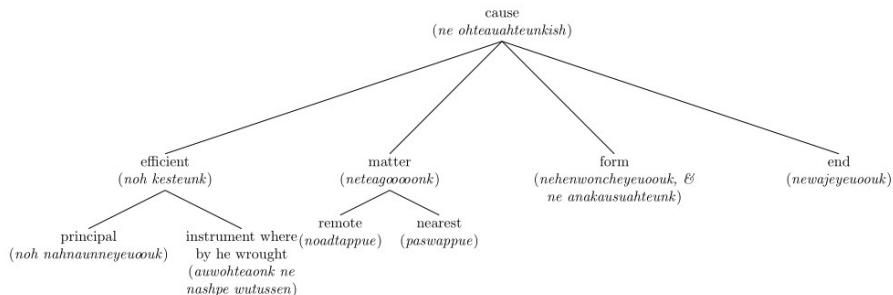


Figure 1: Typologies of causes

Dissenting notions

- No discussion, only examples given in the form of Biblical references.
- E.g., “contraries, which argue with each other” (*penoanittumooash, nish wequohtoadtumooash*)
- “contradictors, which argue each other” (*pannoowohtoadtumooash, nish wequohtoadtumooash*).

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- “contradictors, which argue each other” (*pannowohtoadtumooash, nish wequohtoadtumooash*). Acts 13:45, which only uses the word rather than defining it or illustrating it. (“But when the lewes saw the multitudes, they were filled with enuie, and spake against those things which were spoken by Paul, contradicting, and blaspheming,” King James Version (1611).)

Binding words

and	<i>kah</i>
was	<i>mo</i>
or	<i>asuh</i>
again	<i>wonk</i>
but	<i>qut</i>
another	<i>onkatuk</i>
like	<i>netatup</i>
for	<i>newutche</i>
but	<i>webe</i>
as	<i>neane</i>
in	<i>ut</i>
so	<i>nemehkuh</i>
the	<i>ne</i>
for this cause	<i>newaj</i>
is it	<i>sun</i>

Creating propositions

Propositions are “many fold” (*moocheke chippaiyeuash*):

- affirmed/negative
- true/false
- general/special
- single/compound.

Table: Theoretical terms

affirmative	<i>noowae</i>
negative	<i>quenoowae</i>
true	<i>wunnomwae</i>
false	<i>pannoowae</i>
general	<i>wameyeue</i>
special	<i>nanasiyeue, nanahsiyeue</i>
single	<i>pasukooe</i>
compound	<i>neesepiskue</i>

Typology of propositions

- compounded propositions
 - ① “conjunct propositions” (*moehteae pakodtittumœonk*) which are bonded together with words such as *kah*, *wonk*, *netatup*, *newutch*, etc.
 - ② “disjunct propositions” (*chachaubenumœe pakodtittumœonk*) which are bounded together by “a disjoyning word” such as *asuh*, *qut*, *matta*.
- No discussion of quantifiers.
- No (further) discussion of causative or inferential markers.

Some examples

John 9:3 “Neither he hath sinned nor his parents” (*Matta yeuoh matchesu, asuh œchetuonguh*):

a negative, special, compound, disjunct proposition (quenœwae, nanasiyeue, neesepiskue, chachaubenumœe pakodtittumœonk).

The third part of logic

The third part of logic, which is “bindingly to compose propositions to make a Discourse” (*moappissue moehteauunat pakodtittumooongash ayimunat keketoontamóonk.*)

- “syllogistical” (*oggusanukōowae*)
- “discursive” (*sepapwoae*), later called “methodical”.

Syllogisms

Syllogistical discourse is made up out of three components:

- 1 “major proposition” (*mohsag pakodtittumooonk*)
- 2 “minor proposition” (*pawag pakodtittumooonk*),
- 3 “conclusion inlightened, looked on” (*wequossumoomook, naumoomook*).

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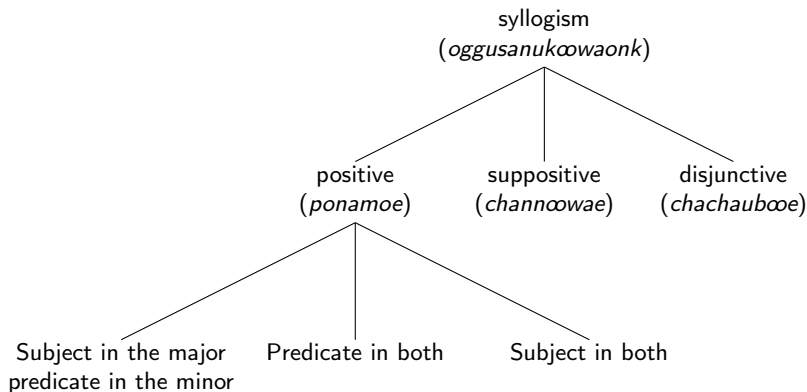
Furthermore, there can be at most three single notions contained in any syllogism:

- ① the “subject” (*ne teag*),
- ② the “predicate” (*ne kootnumuk*,
- ③ “the light, or Argument” (*wequohtóonk, asuh ootsinnooonk*)

Types of syllogisms

Syllogisms are divided into three forms:

- 1 “positive” (*ponamoe*)
- 2 “suppositive” (*channōwae*)
- 3 “disjunctive” (*chachaubōe*)



Positive syllogisms

Three types of positive syllogisms:

(1) when the Propositions neither alike begin nor end, because the Argument is the Subject in the Major, Predicate in the Minor Proposition.

pakodtittumøongash matta netatuppe wajkutchissinuhhettit asuh wohkukquoshinuhettit newutche wequohtoonk teagøø ut mohsag ut, kah ne kootnumuk pawag pakodtittumøonganit.

(2) when both Propositions alike end; because the Argument is the Predicate in both Propositions.

naneeswe pakodtittumøongash netatuppe wohkukquoshinash, newutche wequohtoonk ne kootnumuk ut na neeswe pakodtittumøonganit.

(3) when both Propositions alike begin, because the Argument is the Subject in both.

neeswe pakodtittumøongash netatuppe kutchissinuhettit, newutche wequohtoonk ne teagøø ut naneese pakodtittumøonganit.

Example syllogisms

All of Eliot's example syllogisms are

- drawn from the Bible;
- intended to answer theological questions (such as “may the infant children of believers be baptized?” / *Uppeissesumoh wanamptogig, sun woh kutchessumóog?*)

In each syllogism, Eliot identifies the subject and predicate, and refers to either a Bible verse to support the truth of the premises, or adduces another syllogism.

Suppositive syllogisms

Suppositive syllogisms are those where

In the Major proposition the Argument is suppositively put to the thing proved. Then in the Minor Proposition the Argument is affirmed.

Ut mohsag pakodtittumooonganit wequohtoonk channooae ponamun ne woh wequohtauomook. Neit ut pawag pakodtittumooonganit wequohtoonk noowae ponamun.

An example

(1) If Unbelief driveth us from God
then we must beware of it.

(2) But Unbelief driveth us from
God.

(3) Therefore we must beware of it.

(1') *Tohneit mat wunnamptamoonk
kutamaookunkqun wutch Godut,
neit woh nutahqueteauun.*

(2') *Qut mat wunnamptamoonk
kutamaookunkqun wutch Godut.*

(3') *Newaj woh nutahqueteauun.*

Disjunctive syllogisms

A disjunctive syllogism is when:

The Major Proposition disjunctively speaketh; then the Minor affirmeth one, denieth the other; or denieth one, affirmeth the other.

Mohsag pakodtittumoonk chachauboeae kuttoomook; neit pawag noowau pasuk, kah quenoeau onkatuk; asuh quenoeau pasuk, kah noowau onkatuk.

Examples (1)

None of the examples that Eliot gives straightforwardly match his description.

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Matthew 12:33, “Either make the tree good, and his fruit good; or else make the tree corrupt, and his fruit corrupt: for the tree is known by his fruit,” King James Version (1611):

Either make the tree good its fruit
good, or make evil the tree his fruit
evil.

But your fruit is evil.

Therefore you are evil.

Or, But your fruit is good.

Therefore you are good.

*Asuh ayimook mehtug wunnegen
kah ummeechummuonk wunnegen,
asuh ayimook anit metug kah
ummeechummuonk anit.*

Qut kummeechummuonk anit.

Newaj kummatchetum.

*Asuh, Qut kummeechummuonk
wunnegen.*

Newaj koo eetum.

Examples (2)

A superficial reading:

Either if your tree is good then your fruit is good or if your tree is bad then your fruit is bad; but your fruit is good, therefore your tree is good.

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I.e.,

$$\begin{array}{l} (Gt \rightarrow Gf) \vee (Bt \rightarrow Bf) \\ Gf \\ \therefore Gt \end{array}$$

Examples (3)

Either you are diligent, your field is clean, or you are idle, your field with weeds overgrown.

But your field is clean.

Therefore you are diligent.

Or, But your field with weeds overgrown.

Therefore you are idle.

Asuh kummenu kenitteaéninnu, kah kutohteuk pahketeauun, asuh kussesegenamwaenin, kah kutohteuk mossonog wuttittannekinneau.

Qut kutohteuk paketeauun.

Newaj kummenuhkinitteauun.

Asuh, qut kutohteuk mossong

wuttittannekineau.

Newaj kusseegenamwaenin.

Examples (4)

Either you pray keep holy the
Sabbath-day, or you pray not, keep
not holy the Sabbath-day.
But you keep holy Sabbath-day.
Therefore you pray.
Or, but you keep not holy the
Sabbath-day.
Therefore you pray not.

*Asuh kuppeantam kah
kuppahketeauun Sabbath-day, asuh
matta kuppeantam, & matta
kuppahketeauun Sabbath-day.
Qut kupahketeauun Sabbath-day.
Newaj kuppeantam.
Asuh, qut matta kuppahketeauun
Sabbath-day.
Newaj matta kuppeantam.*

A less superficial look at the examples (1)

Each initial premise is structured not as a disjunction between two implications but rather between two conjunctions:

The tree is good and the fruit is good /
The tree is evil and the fruit is evil (1)

You are diligent and your field is clean /
You are idle and your field is overgrown with weeds. (2)

You pray and keep the Sabbath holy /
You do not pray and do not keep the Sabbath holy. (3)

A less superficial look at the examples (2)

In each pair of conjunctions, each individual conjunct in one disjunction is the negation of one of the conjuncts in the other disjunction:

$$(\phi \wedge \psi) \vee (\neg\phi \wedge \neg\psi)$$

The second premise then is affirming one of the conjuncts; but *because* each conjunct has a corresponding negation in the other disjunct, affirming one of the conjuncts is the same as denying another one of the conjuncts, so we *do* have a denial occurring in the second premise, even if the verbal structure of the argument makes it look like it's an affirmation.

But to deny one conjunct is to deny the whole conjunction, which forces the other disjunct to be true, which means *both* of the conjuncts must be true, leading to the seemingly problematic inference from one conjunct to another in a conjunction.

A less superficial look at the examples (3)

Put schematically, the form that all three of these examples instantiate is:

1	$(\phi \wedge \psi) \vee (\neg\phi \wedge \neg\psi)$	Assumption
2	ψ	Assumption
┌		
3	$\neg\phi \wedge \neg\psi$	Assumption
└		
4	$\neg\psi$	$\wedge E$, 3
5	ψ	Reiteration, 2
6	$\neg(\neg\phi \wedge \neg\psi)$	$\neg I$, 3–5
7	$\phi \wedge \psi$	DS , 1, 6
8	ϕ	$\wedge E$, 7

And this is valid.

“Methodicall” Discourse

Two types:

- ① “First orderly to lay together Notions & Propositions” (*Negonne kohkunumukish miyanumunat wahittumooash & pakodtittumooongash*).
- ② Second, “to analyse [and] open Propositions [and] Arguments. Also to open Propositions by single Notions, which by composed” (*kogahkenanumunat kah woshwunumunat pakodtittumooongash kah wequohtooongash. Wonk woshwunumunat pakodtittumooongash nashpe syeumoot wahittumooash, nish nashpe moehteauunash*).

The principles of the *Primer* applied

- c.15 pages of methodical discourse, entirely in Massachusett (no translation).
- Clearly structured discourse: A Bible verse is cited, and then a first syllogism is extracted from the verse, followed by one, or sometimes two or three, alternative syllogisms.
- The source verses cover a wide range across both the Old Testament (Psalms, Proverbs) and the New (Matthew, Romans, 1 Corinthians, 1 John, 1 Peter).

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... And that's it.

Distinctive features of the *Primer*

- Tripartite account of logic (terms/propositions/arguments).
- Choice of basic notions and binding words.
- The identification of the middle term with “reason” or the “light”.
- Aristotelian account of causes.
- Heavy use of scriptural examples.

What's noteworthy about Eliot's *Primer*?

- How does it compare to what he was (presumably) taught?
- Is this “Puritan logic”?

Logic education in 16th and 17th C England (1)

- Teaching at Oxford and Cambridge shifted from university-wide to narrower, college-based teaching structures.
- Puritan influence, esp. in Cambridge, grew significantly, in particular in Jesus and Christ college.
- Statues of individual colleges: Traditional Aristotle; rejection of Scholasticism; plus emphasis on rhetoric.
- Reactions against Scholastic logic:
 - ▶ Agricola
 - ▶ Ramus

Logic education in 16th and 17th C England (2)

- Henry VIII's Royal Injunction of 1535, which required:
students in arts should be instructed in the elements of logic, rhetoric, arithmetic, geography, music, and philosophy, and should read Aristotle, Rodolphus Agricola, Philip Melancthon [sic], Trapezuntius, &c. and not the frivolous questions and obscure glosses of Scotus, Burleus, Anthony Trombet, Bricot, Bruliferius, &c.
- Renaissance humanism, typified by Rudolph Agricola, *De inventione dialectica* (1515), which focused on “applied argumentation”, and the two parts of dialectic:
 - ▶ Invention
 - ▶ Disposition/Judgement/Arrangement
- Agricola's influence was widespread at Cambridge in the first half of the 16th century.

Logic education in 16th and 17th C England (3)

- Other significant influence: Ramism (Petrus Ramus / Pierre de la Ramée, 1515–1572).
- Influenced by Agricola, via Johannes Sturm.
- Two English translators of Ramus's *Dialecticae Libri Duo*
 - ▶ Roland MacIlmaine (1574).
 - ▶ Dudley Fenner (1584) (published in the Netherlands after his expulsion from Cambridge). Fenner “made Ramism the cornerstone of much future Puritan thought”.

Is Eliot's logic "Puritan logic"?

Or rather, *Is it Ramist?*

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Or rather, *Is it Ramist?*

Lots of commentators think so, but opinion varies:

- Miller: the *Primer* an abridged translation of one of Peter Ramus's writings.
- Gray's description of the work as "a step-by-step approach to Ramean logical and syllogictical [sic] reasoning."
- Cogley notes that "Miner and Guice have explained that Eliot's *Logick Primer* was an original composition. . . and the linguists disagree as to how Ramist in influence the work is."

Ramism in Eliot's *Grammar*

- “heavy reliance on a form of binary classification of features of grammar. . . in real contrast to Aristotelian practices” (Guice).
- The definition of “logic” and “rhetoric” in the *Grammar* “show a strong Ramistic pattern” (Guice):
The laying of Sentences together to make up a Speech is performed by Logick. . . The adorning of that Speech with Eloquence, is performed by Rhetoric.

Ramism in the *Primer*?

- Conspicuous *lack* of the binary classification strategy.
- Definition of “logick” does not match either Fenner or McIlmaine’s.
 - Eliot Logic is a rule “where by every thing, every Speech is composed, analysed or opened to be known.”
 - McIlmaine “Dialecticke otherwise called Logicke, is an arte which teachethe to dispute well. It is diuyled into two partes: Inuention, and iudgement or disposition.”
 - Fenner “Logike is an arte of reasoning. Logike hath 2. partes, 1. The spring of reasons called Inuention. 2. Iudgement. (An arte is that orderlie placing of rules, wherby the easiest being firste set down, and then the harder, the perfect way of learning anie thing, usfullie set downe.)”
- No trace of the invention/disposition distinction.

Colonisation and Linguistic Conservation (1)

On the one hand:

- Before Eliot, speakers of Massachusett and related dialects had no written language.
- Due in no small part to Eliot's efforts, the Massachusett language is one of the earliest and best documented language of the indigenous peoples of the east coast of North America.
- The documentary evidence that was the fruit of Eliot's efforts is what made groups like the Wôpanâak Language Reclamation Project possible.

Colonisation and Linguistic Conservation (2)

On the other hand, we cannot ignore the colonial and proselytizing origins of Eliot's linguistic work.

- The *Primer* is an extremely functional book, focusing on definitions and examples with very little in terms of explanation or theoretical background to provide context to the reader.
- Eliot's purpose is to teach the reader, "whereby you may open the Word of God, [the] Bible" (*waj woh kōowoshwunumwō wuttinnōwaongash Godut Bibleut*).
- Letter to Baxter, 1669: "And all p'ts w^{ch} receive the word of God, and pray, doe readily understand the Bible, and catechisme, and other books; and these books will be a meanes to fix, and extend, this language.'
- "Eliot's evangelical approach to his religious translations, as well as his language and logic primers, reveals assumptions of cultural and religious superiority which are typical of New England missionary-colonisers" (Gray).