

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

Contradiction and the Structure of Unity

Graham Priest

June 17, 2012

GLLI Seminar - 21.06.2012 - Opole University

Our Agenda

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

1 Unity and its Problems

2 Identity and Gluons

3 The Unity of the Proposition Revisited

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

I: Unity and its Problems

Unity and its Problems

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glue

The Unity of
the
Proposition
Revisited

Frege on the Unity of the Proposition

Unities and their Parts

Vicious Regress

Explaining Unity

The Aporia

The Unity of the Proposition

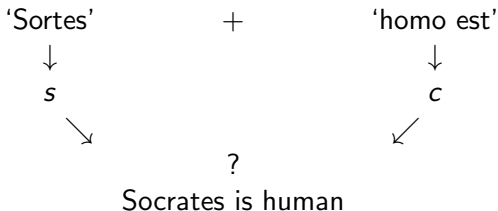
Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glue

The Unity of
the
Proposition
Revisited



Frege on Concepts

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- The concept referred to by 'homo est' has a "gap" in it.

I admit that there is a quite peculiar obstacle in the way of an understanding with my reader. By a kind of necessity of language, my expressions, taken literally, sometimes miss my thoughts; I mention an object when what I intend is a concept. I fully realize that in such cases I was relying on the reader who would be ready to meet me half-way—who does not begrudge me a pinch of salt.

Frege on Concepts

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- The concept referred to by 'homo est' has a "gap" in it.

Unity and its Problems

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

Frege on the Unity of the Proposition

Unities and their Parts

Vicious Regress

Explaining Unity

The Aporia

Aristotle

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

In general, too, all the ways of showing that the whole is not the same as the sum of its parts are useful in meeting the type ... [of man who defines an object to be its parts]; for a man who defines in this way seems to assert that the parts are the same as the whole. The arguments are particularly appropriate in cases where the process of putting the parts together are obvious, as in a house and other things of that sort; for there, clearly, you may have the parts yet not have the whole, so that the parts and the whole cannot be the same.

The General Problem

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

■ p_1, \dots, p_n

The General Problem

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

- p_1, \dots, p_n

- Gluon, g

The General Problem

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- p_1, \dots, p_n

- Gluon, g

- p_1, \dots, p_n, g

Unity and its Problems

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glue

The Unity of
the
Proposition
Revisited

Frege on the Unity of the Proposition

Unities and their Parts

Vicious Regress

Explaining Unity

The Aporia

It might be thought that 'is', here, is a constant constituent. But this would be a mistake: 'x is α ' is obtained from 'Socrates is human', which is to be regarded as a subject-predicate proposition, and such propositions, we said, have only two constituents [Socrates and humanity]. Thus 'is' represents merely the way in which the constituents are put together. This cannot be a new constituent, for if it were there would have to be a new way in which it and the two other constituents are put together, and if we take this way as again a constituent, we find ourselves embarked on an infinite regress.

[we] have made no progress. The relation C has been admitted different from A and B ... Something, however, seems to be said of this relation C , and said, again, of A and B ... [This] would appear to be another relation, D , in which C , on one side, and, on the other side, A and B , stand. But such a makeshift leads at once to the infinite process... [W]e must have recourse to a fresh relation, E , which comes between D and whatever we had before. But this must lead to another, F ; and so on indefinitely.. [The situation] either demands a new relation, and so on without end, or it leaves us where we were, entangled in difficulties.

Unity and its Problems

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

Frege on the Unity of the Proposition

Unities and their Parts

The Regress

Explaining Unity

The Aporia

When we ask 'What is the composition of [an object]', we break up [that object], which comes to us as a whole, into units... But since it is clear that these units by themselves are not all the 'composition', we are forced to recognise the existence of relations. But this does not stagger us. We push on with the conceptions we have brought to the work, and which of course can not be false, and we say, Oh yes, we have there more units, naturally not quite the same as the others, and — voil tout. But when a sceptical reader, whose mind has not been warped by a different education, attempts to form an idea of what is meant, he is somewhat at a loss.

Unity and its Problems

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glue

The Unity of
the
Proposition
Revisited

Frege on the Unity of the Proposition

Unities and their Parts

The Regress

Explaining Unity

The Aporia

The Choices

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

- 1 Say that there are no gluons.
- 2 Reject the arguments to the effect that a gluon is an object.
- 3 Reject the arguments to the effect that it is not an object.
- 4 Accept the contradictory nature of gluons.

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

II: Glucos and Identity

Identity and Gluons

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

Solution to the Problem

Background on Paraconsistency

Identity

The Gluon Condition

Glueons and Identity

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glueons

The Unity of
the
Proposition
Revisited

$$\begin{array}{c} b \\ || \\ a = g = c \\ || \\ d \end{array}$$

- $a = g$ and $g = c$, but not $a = c$

Identity and Gluons

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

Solution to the Problem

Background on Paraconsistency

Identity

The Gluon Condition

Classical Logic: Negation

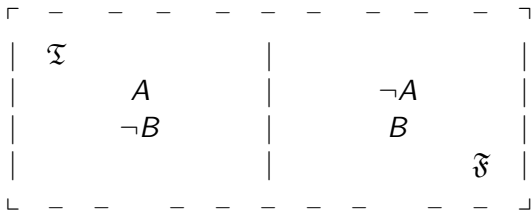
Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited



Classical Logic: Material Equivalence

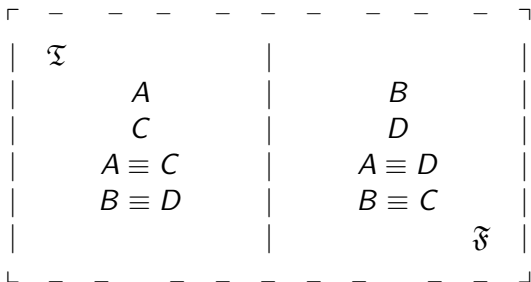
Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited



Properties of \equiv

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glouons

The Unity of
the
Proposition
Revisited

- $\vdash A \equiv A$
- $A \equiv B \vdash B \equiv A$
- $A, B \vdash A \equiv B$
- $\neg A, \neg B \vdash A \equiv B$
- $A, \neg B \vdash \neg(A \equiv B)$
- $A \equiv B \vdash \neg A \equiv \neg B$
- $\neg A \equiv \neg B \vdash A \equiv B$
- $A \equiv B, B \equiv C \not\vdash A \equiv C$

Identity and Gluons

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

Solution to the Problem

Background on Paraconsistency

Identity

The Gluon Condition

Identity

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glouons

The Unity of
the
Proposition
Revisited

$a_1 = a_2$ is $\forall X(Xa_1 \equiv Xa_2)$

Reflexivity. Symmetry, Non-Transitivity

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- $\vDash a = a$
- $a_1 = a_2 \vDash a_2 = a_1$

Reflexivity. Symmetry, Non-Transitivity

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- $\vDash a = a$
- $a_1 = a_2 \vDash a_2 = a_1$
- $a_1 = a_2, a_2 = a_3 \not\vDash a_1 = a_3$

Identity and Gluons

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

Solution to the Problem

Background on Paraconsistency

Identity

The Gluon Condition

Gluon Condition

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

- g binds the members of the set of objects, X iff g has every property of every member of X
- g is a *gluon* for set of objects X iff X is a maximal set such that g binds X

Illustration

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glue

The Unity of
the
Proposition
Revisited

X	i	$P_1, \neg P_2, P_3$
	g	$P_1, \neg P_1, P_2, \neg P_2, P_3$
	j	$\neg P_1, P_2, P_3$
	k	$P_1, P_2, \neg P_3$

To Be and not to Be an Object

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- Ox is $\exists y y = x$

To Be and not to Be an Object

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- Ox is $\exists y y = x$
- If an object with gluon g has at least two distinct parts, Og and $\neg Og$.

Regress Regained?

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

■ $g \neq p$

Regress Regained?

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glue

The Unity of
the
Proposition
Revisited

- $g \neq p$

- $p = g$ and $g = g$

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

III: The Unity of the Proposition Revisited

States of Affairs

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

- A state of affairs, $|Fa|$, is a unity with parts F and $\langle 1, a \rangle$.
- These are joined with a gluon, g .

States of Affairs

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

- A state of affairs, $|Fa|$, is a unity with parts F and $\langle 1, a \rangle$.
- These are joined with a gluon, g .
- Virtue is rare.
- Rarity is a virtue.

States of Affairs

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Gluons

The Unity of
the
Proposition
Revisited

- A state of affairs, $|Fa|$, is a unity with parts F and $\langle 1, a \rangle$.
- These are joined with a gluon, g .
- Virtue is rare.
- Rarity is a virtue.
- The statement ' Fa ' expresses the state of affairs $|Fa|$.

More Generally ...

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- A state of affairs, $|Fa_1...a_n|$, is a unity with parts F and $\langle n, a_1, \dots, a_n \rangle$.
- These are joined with gluon g .
- The statement ' $Fa_1...a_n$ ' expresses the state of affairs $|Fa_1...a_n|$.

More Generally ...

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glucos

The Unity of
the
Proposition
Revisited

- A state of affairs, $|Fa_1...a_n|$, is a unity with parts F and $\langle n, a_1, \dots, a_n \rangle$.
- These are joined with gluon g .
- The statement ' $Fa_1...a_n$ ' expresses the state of affairs $|Fa_1...a_n|$.
- This is the solution to the problem of the unity of the proposition.

The End

Contradiction
and the
Structure of
Unity

Graham Priest

Unity and its
Problems

Identity and
Glueons

The Unity of
the
Proposition
Revisited

That puts all the parts of the talk together.