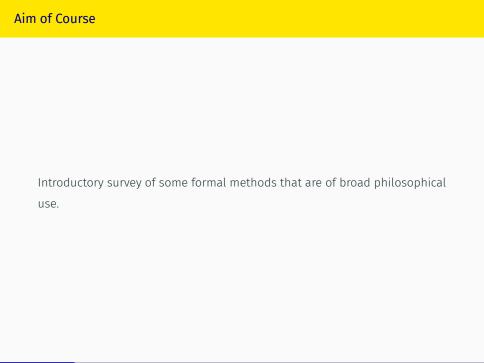
305 Lecture 01 - Getting Started

Brian Weatherson

July 1, 2020



Three Sections

- 1. Propositional Logic
- 2. Probability and Statistical Reasoning
- 3. Modal Logic and Conditionals

Propositional Logic

• This is the logic of sentences that can be true or false, and that can combine to form longer sentences.

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- It is taken for granted in almost any field (outside philosophy) where formal tools are used.
- In philosophy we might sometimes want to drop the assumption that everything is either true or false (and not both), but for this course we'll take it for granted.

Probability and Statistical Reasoning			
• Sometimes we can't infer that a conclusion is definitely true, but we can infer that it is probably true.			

Probability and Statistical Reasoning

- Sometimes we can't infer that a conclusion is definitely true, but we can infer that it is probably true.
- We will look at some tools for regimenting how and when we make such inference.

Modal Logic

This is the logic of 'must' and 'might'. It has as many applications as there are interpretations of 'must' and 'might'. The primary interpretations we'll look at are:

- Metaphysical
- · Epistemological
- Moral

Textbooks

There are three - all of them available through Canvas.

- 1. The Carnap Book by Graham Leach-Krouse
- 2. Odds and Ends by Jonathan Weisberg
- 3. Boxes and Diamonds, Ann Arbor remix

The three books are for the three parts of the course.

Welcome to Carnap.io

A formal logic framework for Haskell

Background

Carnap is a free and open software framework written in Haskell for teaching and studying formal logic.

Carnap powers the interactive online component of Kansas State University's PHILO110: Introduction to Formal Logic and PHILO320: Introduction to Symbolic Logic I and also supports logic teaching at the University of Birmingham.

If you're a student in a course that uses Carnap, please follow the links at the top of the page to log in and to access course materials.

If you're just curious about Carnap, you can find some general information on our about page. If you're interested in the project, and would like to use Carnap in a class you're teaching, or get involved in some other way, please feel free to get in touch!

```
Show: \neg\exists x \forall v (\neg F(v,v) \leftrightarrow F(x,v))
       \exists x \forall v (\neg F(v,v) \leftrightarrow F(x,v))
                                                   ΔS
       Show: \neg \exists x \forall v (\neg F(v,v) \leftrightarrow F(x,v))
        \forall v(\neg F(v,v) \leftrightarrow F(c 1,v))
        (¬F(c_1,c_1) ↔ F(c_1,c_1)) UI 4
6.
         Show: ¬F(c_1,c_1)
7.
         F(c 1,c 1)
                                                   AS
8.
         (F(c 1,c 1) → ¬F(c 1,c 1)) BC 5
Q
         ¬F(c 1,c 1)
                                              MP 8.7
10.
                                               ID 7. 9
11.
         (¬F(c 1.c 1) → F(c 1.c 1)) BC 5
12.
         F(c 1.c 1)
                                            MP 11.6
13.
         Show: \neg \exists x \forall y (\neg F(y,y) \leftrightarrow F(x,y))
14.
                                              ID 6, 12
15
                                         ED 13, 2, 4
16.
                                               ID 2, 3
```

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Registering with Carnap

Looks Like You Need to Register				
Please enter the following information				
First name				
Last name				
enrolled in No Course				
Register				
An Open Tower project. Copyright 2015-2020 G. Leach-Krouse <gleachkr@ksu.edu> and J. Ehrlich</gleachkr@ksu.edu>				

Figure 2: One more registration step

Looks Like You Need to Register

Please enter the following information				
First name				
Last name				
enrolled ✓ No Course				
PHIL 2211Q				
PHIL 005/505: Formal Logic - Spring 2020				
Regist Logic Tutorial - BHSEC Queens Spring 2020 HUP112 - Logic and Philosophy, Spring I 2020				
LICI A132				
An Open PHIL 2010: Truth, Lies, and Logical Reasoning	ch-Krouse <gleachkr@ksu.edu> and J. Ehrlich</gleachkr@ksu.edu>			
Philosophy 102: Introduction to Logic				
Test Course				
Formale Logik Sommersemester 2020				
UTM PHL245 Summer 2020 Phil 122: Elementary Logic				
Test Course - Morgan Davies - Logic				
University of Michigan - S20 - PHIL305				
Phil 340 Shell				

Figure 3: Register in the right course

Odds & Ends

Introducing Probability & Decision with a Visual Emphasis Jonathan Weisberg

Preface

THIS textbook is for introductory philosophy courses on probability and inductive logic. It is based on a typical such course I teach at the University of Toronto, where we offer "Probability & Inductive Logic" in the second year, alongside the usual deductive logic intro.

The book assumes no deductive logic. The early chapters introduce the little that's used. In fact almost no formal background is presumed, only very simple high school algebra.

Several well known predecessors inspired and shaped this book. Brian Skyrms' Choice & Chance and Ian Hacking's An Introduction to Probability and Inductive Logic were especially influential. Both texts are widely used with good reason—they are excellent. I've taught both myself many times, with great success. But this book blends my favourite aspects of each, organizing them in the sequence and style I prefer.

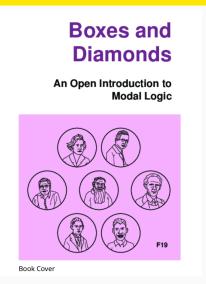


Figure 5: https://bd.openlogicproject.org

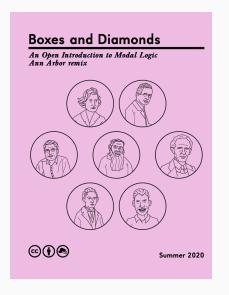


Figure 6: Boxes and Diamonds - Ann Arbor