

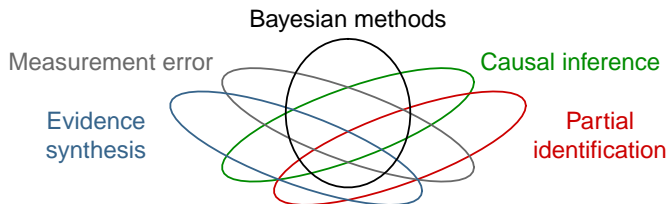
KU Leuven Summer School
Bayesian Inference in Latent Variable Models
Introduction

Paul Gustafson

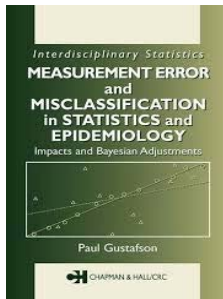
September 15, 2022

Hi there!

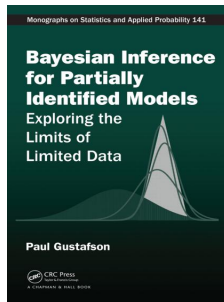
Since you are stuck with me for a couple of days, here's a bit of my (research) back-story.



Books



2004



2015



????

Bayesian Statistical Inference:
An Operating Characteristics Approach???

What I'm hoping to convey

- ▶ Understanding of Bayesian (and in some cases more general) statistical principles
- ▶ Some simple computed examples that might be jumping-off points for more ambitious applied Bayesian work
- ▶ Some understanding of circumstances under which data can tell you less/more, i.e., understanding information flow

Where I particularly worry I will fall short

- ▶ My R code (and often its graphical outputs) makes it look like I went to the graduate school in the early 1990's
- ▶ If you tell me “JAGS threw a blah-blah error message,” I will be sympathetic. But I may also be challenged to get beyond “I hate when that happens!”
- ▶ If you tell me one my examples is way simpler than what you need for an applied modelling challenge you are facing, I may be challenged to get beyond nodding and grinning.
 - ▶ Sidebar about pedagogical tensions here

My standard visceral feeling about teaching

- ▶ **In advance:** *petrified* that I haven't prepared enough material to meaningfully use all the allotted class time.
- ▶ **During:** *mystified* when I have to start rushing to make it through the material.

Will the next two days align with this prior experience???

Note: The posted slides ...

... are skimpy by design

We will annotate as we go along

Outline

Thursday	Friday
Intro	.
1: Jumping into Bayes	4: Diagnostic tests
2(A,B,C): Latent-missing	5(A,B): Preferential sampling
3(A,B): Latent-mismeasured	6: Bayesian calibration
"Lab" / "AMA"	"Lab" / "AMA"
.	Wrap-Up