

# AMBIGUITY & UNCERTAINTY

Presented by Team 7

Stefana Catinca Pop  
2859503

Tomash Oosterbaan  
2780957

Oussama El Mojahid  
2779252

Sihaofu  
2775340

Yuli Wang  
2768409

# CONTENT

- 01** INTRODUCTION
- 02** READING SUMMARIES
- 03** CONTRIBUTIONS
- 04** CRITIQUE
- 05** COMPARATIVE ANALYSIS
- 06** CONNECTION TO BROADER THEMES
- 07** IMPLICATIONS
- 08** DISCUSSION QUESTIONS

# THIS WEEK'S READINGS

*Article 1*

Ambiguity as a Resource For Design

(*Gaver, Beaver, & Benford, 2003*)

*Article 2*

Towards an Uncertainty-Aware  
Visualization in the Digital Humanities

(*Sánchez et al. ,2019*)

# INTRODUCTION

This week's topic looks at ***ambiguity and uncertainty*** in design and visualization from two different angles. These ideas are usually seen as problems that make things unclear or imprecise, but both readings offer new ways of thinking. One article shows how ambiguity can actually be useful in human-computer interaction (HCI), while the other talks about how we can deal with uncertainty in digital humanities visualizations. Together, they encourage us to view ambiguity and uncertainty as helpful tools in design, rather than things we need to avoid.

# READING SUMMARIES

## *Article 1*

This article argues that ambiguity, typically seen as negative in HCI, can be a valuable resource for design. It discusses three types of ambiguity (**information, context, and relationship**) and how these can spark deeper personal engagement with interactive systems. For example, art installations and interactive designs that use ambiguity to provoke thought and engagement from users.

This article explores how uncertainty can be integrated into visual analytics within the digital humanities. It discusses different types of uncertainty (**epistemic, aleatoric**) and suggests frameworks for representing this uncertainty in ways that allow researchers to make informed decisions. The paper emphasizes progressive visual analytics as a method to handle and visualize uncertainty dynamically.

## *Article 2*

# SIGNIFICANT CONTRIBUTIONS

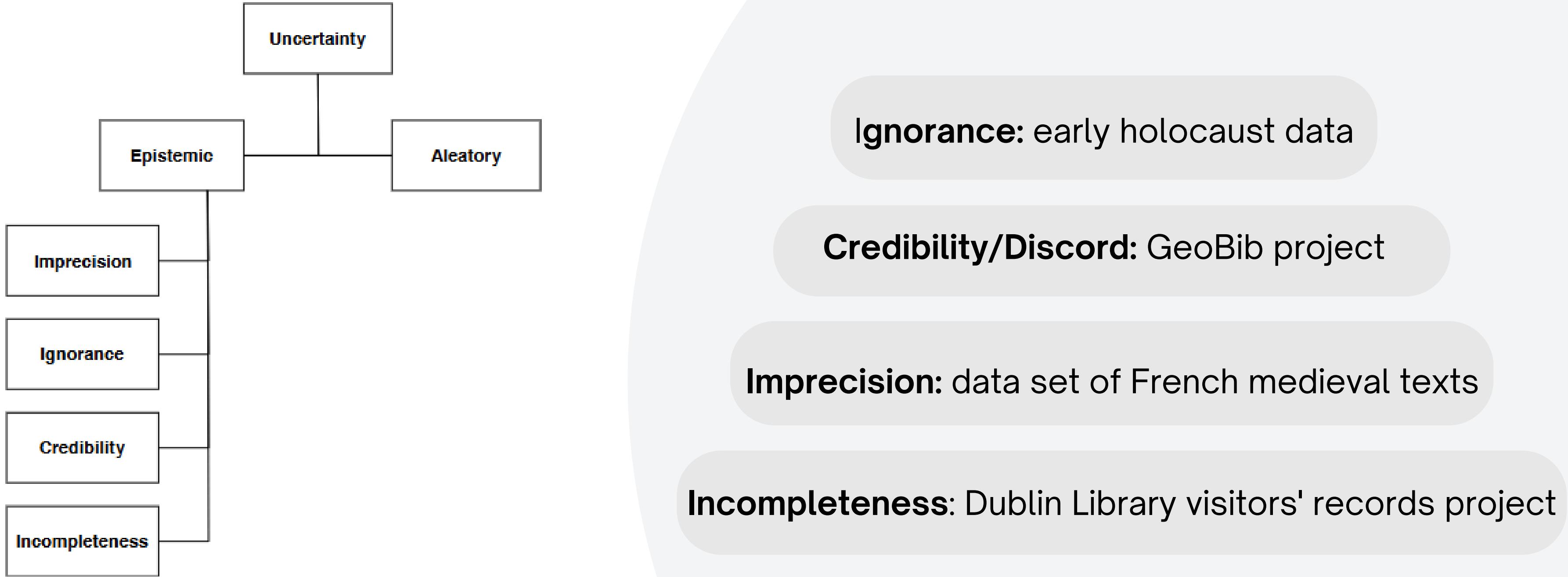
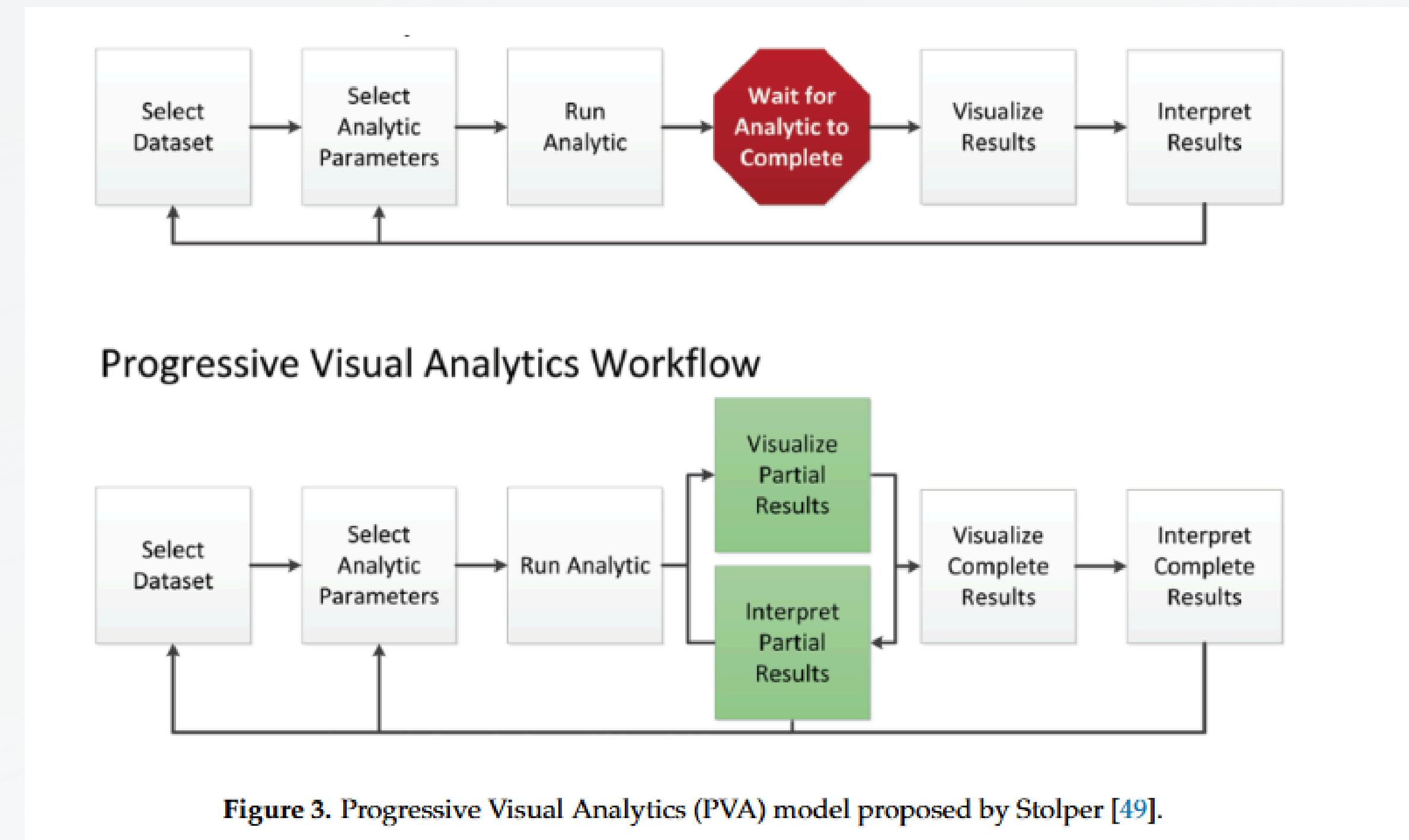


Figure 1. Fisher's taxonomy of uncertainty [17], adapted by [22].

# SIGNIFICANT CONTRIBUTIONS



# CRITIQUE

Limited Applicability to Qualitative Digital Humanities Research

Ambiguity and uncertainty | Difference in definition | Black Box Problem

# what can we learn from this article?

01

**What is  
ambiguity**

02

**4 kinds of  
interesting  
designs**

03

**3 types of  
ambiguity**

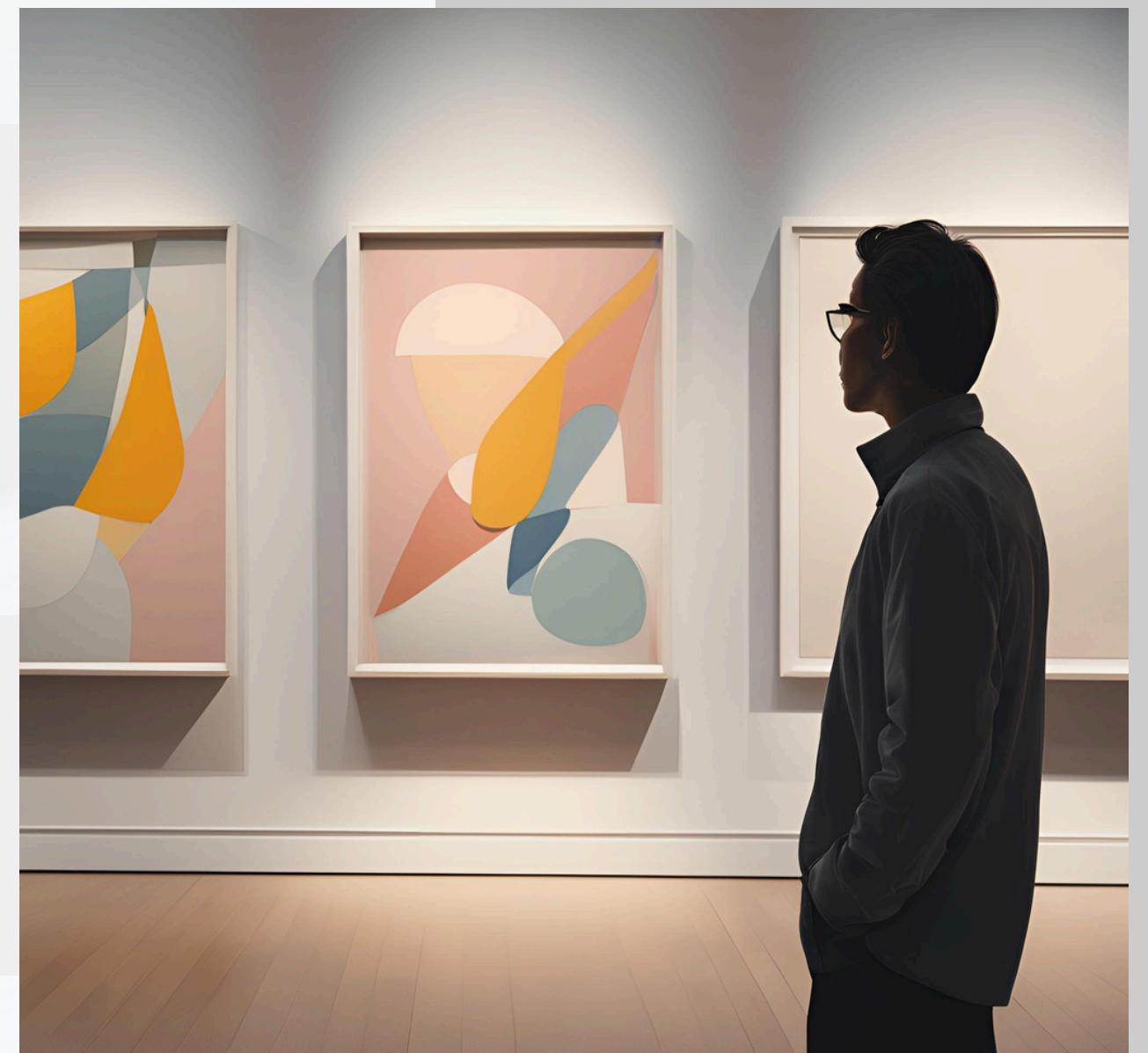
04

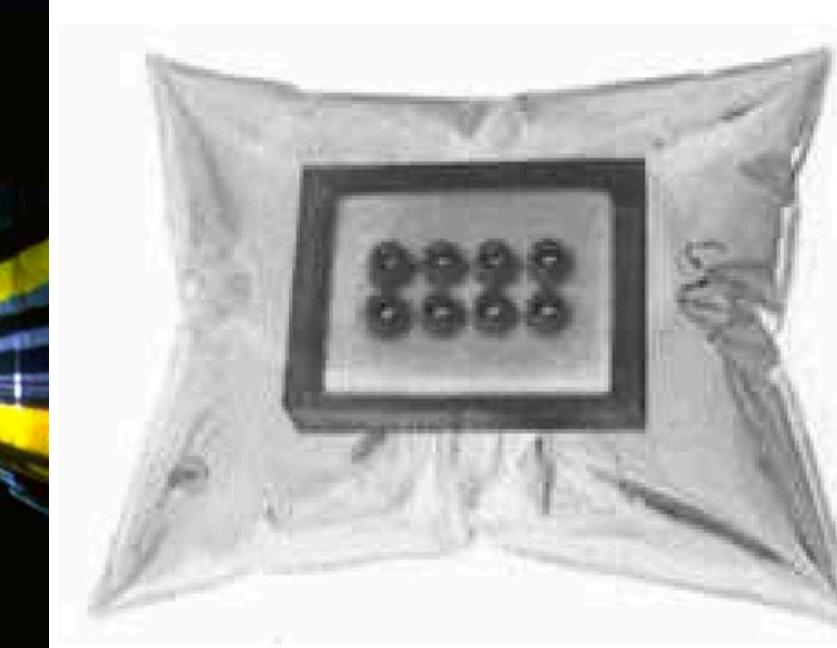
**Tactics  
&  
Conclusion**

# A?M BIJ

# ! UIT %

"Ambiguity is a property of the interpretative relationship between people and artefacts."





---

#### AMBIGUITY AS A DESIGN OPPORTUNITY:

Ambiguity engages users by encouraging them to interpret and create personal meaning from a system, leading to deeper involvement.

#### AMBIGUITY OF INFORMATION:

When information is vague or incomplete, users must actively interpret and fill in the gaps themselves.

#### AMBIGUITY OF CONTEXT:

An artifact's meaning can change depending on its cultural or functional context, allowing users to interpret it in multiple ways.

#### AMBIGUITY OF RELATIONSHIP:

Users project their emotions and values onto a system, leading to personal reflection and a deeper connection with it.

# TYPES OF AMBIGUITY

## INFORMATION



## CONTEXT



## RELATIONSHIP



\*Is there a correlation between higher education levels and negative attitudes towards mainstream ideology as presented in short video content on Douyin?

# TACTICS FOR USING AMBIGUITY

## Enhancing Ambiguity of Information:

Use imprecise representations to emphasise uncertainty.

Over-interpret data to encourage speculation.

Expose inconsistencies to create a space of interpretation.

Cast doubt on sources to provoke independent assessment.

## Creating Ambiguity of Context

Implicate incompatible contexts to disrupt preconceptions.

Add incongruous functions to breach existing genres.

Block expected functionality to comment on familiar products.

## Provoking Ambiguity of Relationship

Offer unaccustomed roles to encourage imagination.

Point out things without explaining why.

Introduce disturbing side effects to question responsibility.



# CONCLUSIONS A.1

Encouraging Inquiry

Challenging Contexts

Fostering Personal  
Reflection

Suggest issues and  
perspectives without  
imposing solutions

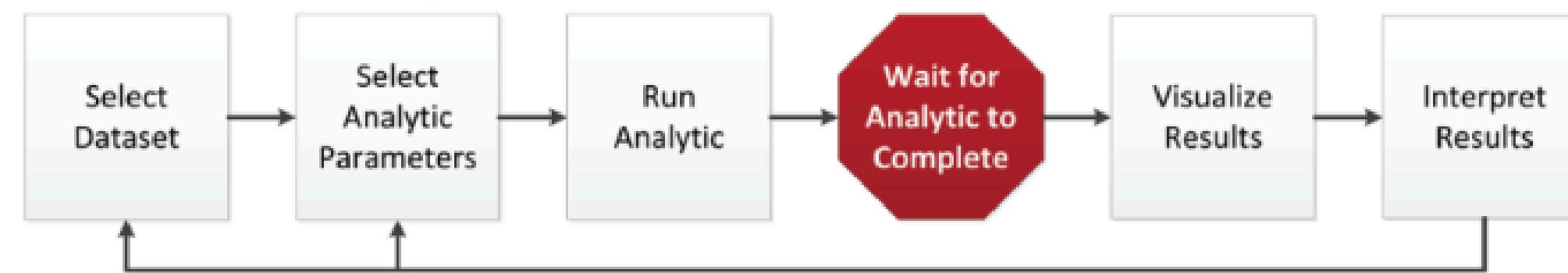
WHAT DO YOU THINK?

How can designers balance the appeal of ambiguity with the need for accessibility, ensuring that their creations are thought-provoking without becoming overly obscure?

Can ambiguity in design lead to more meaningful interactions, or does it risk alienating users who seek clarity and purpose in their experiences?

# SIGNIFICANT CONTRIBUTIONS

Ambiguity and uncertainty  
Black Box Problem



Progressive Visual Analytics Workflow

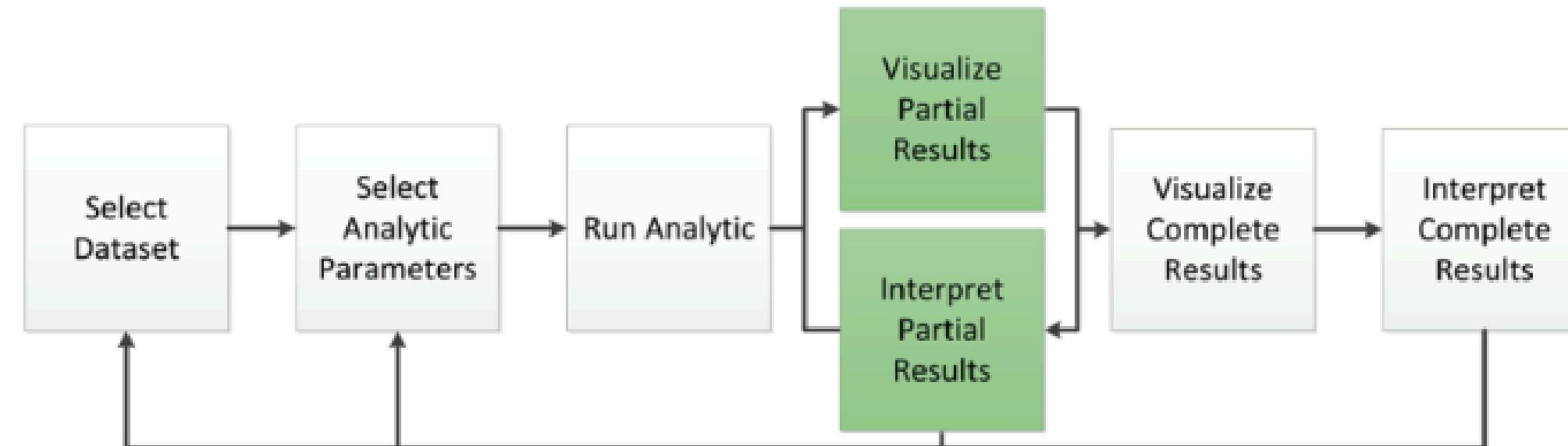


Figure 3. Progressive Visual Analytics (PVA) model proposed by Stolper [49].

**THANK YOU !**

