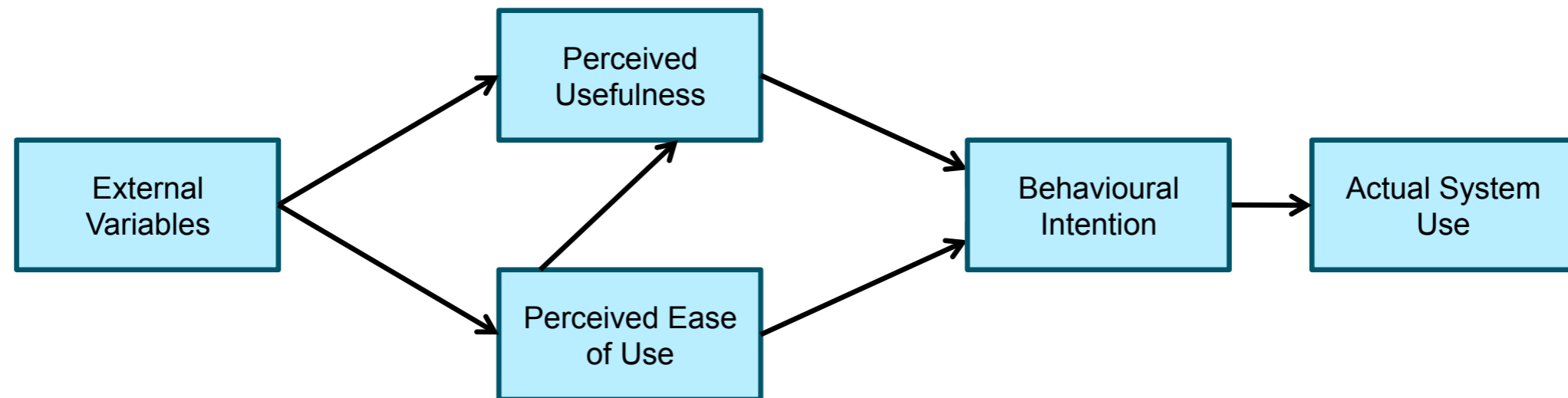


Technology Acceptance Model

- Technology Acceptance Model (TAM)
 - Fred Davis (1986) – PhD Thesis at MIT
 - Adaption of Fishbein and Ajzen’s Theory of Reasoned Action (TRA)
 - Davis’ paper “Perceived usefulness, perceived ease of use, and user acceptance of information technology” (1989)
 - Citations on Google Scholar
 - 19/05/10 - 5,403
 - 06/03/13 - 15,092
 - 07/03/13 - 15,103
 - 31/01/14 - 18,410
 - A very heavily cited paper

Technology Acceptance Model



Final Version of Technology Acceptance Model (TAM). Source: (Venkatesh & Davis, 1996)

- Technology Acceptance Model (TAM)
 - External Variables include “system characteristics, training, user involvement in design, and the nature of the implementation process” (Venkatesh & Davis, 1996)
 - These ‘[...] directly influence the perceived usefulness and perceived ease of use’, in turn mediating behavioural intention to use” (Davis, 1993)

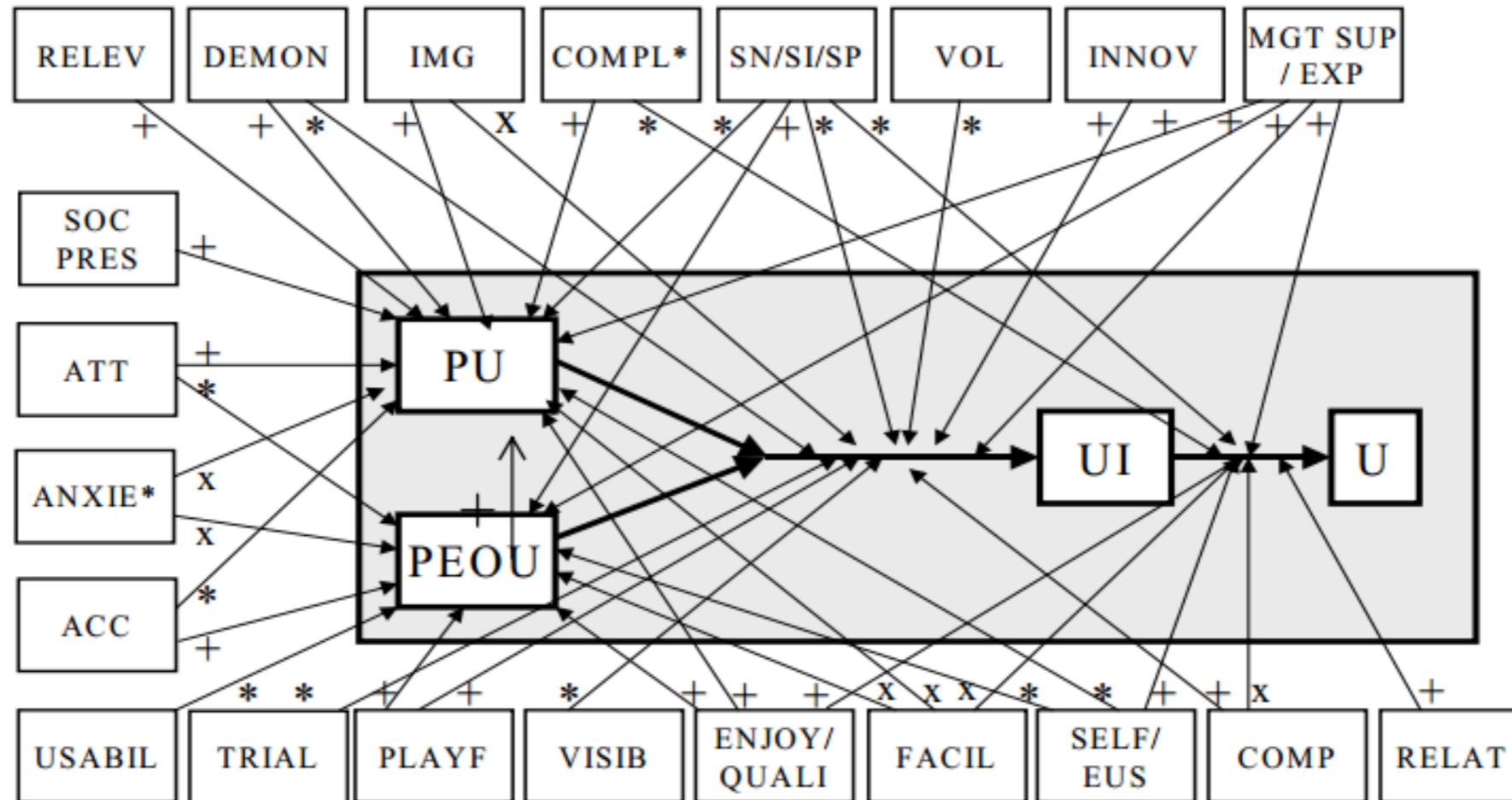
Problems with TAM Research

- TAM is a parsimonious model
 - This strength is also its weakness
 - Researchers have “overlooked essential determinants of decisions and actions [...]” (Bagozzi, 2007)
 - Why do people use a technology in the first place?
 - Think of COMPGA10 – People & Security
- TAM has been augmented many times
 - Introducing new variables to explain why parts of the model work the way they do
 - Age, gender, voluntariness, age, training, innovativeness, anxiety, etc.

Adding New Variables to TAM

- Example studies:
 - **Gender** Differences in the Perception and Use of E-Mail: An Extension to the Technology Acceptance Model - David Gefen and Detmar W. Straub - MIS Quarterly , Vol. 21, No. 4 (Dec., 1997), pp. 389-400
 - Featherman, Mauricio. "Extending the technology acceptance model by inclusion of **perceived risk**." (2001)
 - Yang, Hee-dong, and Youngjin Yoo. "It's all about **attitude**: revisiting the technology acceptance model." Decision Support Systems 38.1 (2004): 19-31
 - Lee, Younghwa, Jintae Lee, and Zoonky Lee. "**Social influence** on technology acceptance behavior: self-identity theory perspective." ACM SIGMIS Database 37.2-3 (2006): 60-75
 - Gefen, David, Elena Karahanna, and Detmar W. Straub. "**Trust** and TAM in online shopping: An integrated model." MIS quarterly (2003): 51-90
 - etc., etc., etc.

External Variables & TAM



•ACC: Accessibility, ANXIE: Anxiety, ATT: Attitude, COMP: Compatibility, COMPL: Complexity, DEMON: Result Demonstrability, ENJOY: Perceived Enjoyment, EUS: End User Support, EXP: Experience, FACIL: Facilitating Conditions, IMG: Image, RELEV: Job Relevance, MGT SUP: Managerial Support, PLAYF: Playfulness, INNOV: Personal Innovativeness, RELAT: Relative Advantage, SELF: Self-Efficacy, SI/SN/SP: Social Influence, Subjective Norms, and Social Pressure, SOC PRES: Social Presence, TRIAL: Trialability, USABIL: Usability, VISIB: Visibility, VOL: Voluntariness,

*: mixed, +: significant, x: insignificant relationship

Figure 2 Relationships between External Variables and Major TAM Variables

¹ Source: Lee, Younghwa, Kenneth A. Kozar, and Kai RT Larsen. "The technology acceptance model: Past, present, and future." *The Communications of the Association for Information Systems* 12.1 (2003): 53.

TAM Research

- Each paper follows the scientific method:
 - Description of TAM and identified shortcoming(s)
 - Hypothesised augmented TAM
 - Hypothesised linkages between variables
 - Data collected – usually a survey
 - Data analysed – usually structural equation modelling
 - Results explained
 - Conclusions
- But is this enough? Is this the right approach?

Bagozzi's (2007) Critique

- Focus on extending TAM by introducing new variables has broadened, not deepened, it
 - No understanding of why does a particular variable influence technology adoption
- Venkatesh et al. (2007):
 - Identified problems with researchers focusing on 'tweaking' of TAM, rather than the more important issues in technology adoption
- Extensions to TAM are "[...] a patchwork of many largely unintegrated and uncoordinated abridgements" (Bagozzi, 2007, p.252)

TAM References

- Bagozzi, R.P. (2007). The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift. *Journal of the Association of Information Systems*. 8 (4). p.pp. 244–254.
- Davis, F.D. (1986). A technology acceptance model for empirically testing new end-user information systems: theory and results. Thesis. [Online]. Available from: <http://dspace.mit.edu/handle/1721.1/15192>.
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*. 13 (3). p.pp. 319–339.
- Lee, Younghwa, Kenneth A. Kozar, and Kai RT Larsen. "The technology acceptance model: Past, present, and future." *The Communications of the Association for Information Systems* 12.1 (2003): 53.
- Venkatesh, V. & Davis, F.D. (1996). A Model of the Antecedents of Perceived Ease of Use: Development and Test. *Decision Sciences*. 27 (3). p.pp. 451–481.
- Venkatesh, V., Morris, M.G., Davis, G.B. & Davis, F.D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*. 27 (3). p.pp. 425–478.

A Good Thesis (from COMPGA99)

- Addresses one or more challenging information security problems
- Describes why this problem is important
- Describes related work that has already been done in the area and what the state of the art currently is
- Proposes solutions and gives a critical evaluation of the proposed solutions

A Good Thesis (from COMPGA99)

- Addresses observation, problem information
security problem Definition & Initial Data
- Describes what is being gathered
Gathering
- Describes research that has already been done
in the area and what part currently is
Literature Review
- Proposes solutions and their initial evaluation
of the proposed Hypotheses/Proposed
Models

A Good Thesis (from COMPGA99)

- Gives an easy to read presentation of the results, uses precise and correct technical terms
- It gives a balanced and critical evaluation of the proposed solutions
- May point to further interesting research questions

A Good Thesis (from COMPGA99)

Data Collection

- Gives an easy to read presentation of the results, uses precise terms

Analysis & Results

- It gives a balanced and critical evaluation of the proposed solution

Discussion

- May point to further research questions

Conclusions & Further Work

A Good Thesis

- Ties the different parts of the thesis together to form a whole coherent argument
- It displays creativity, thoroughness, logical and critical reasoning, etc.

A Good Thesis

- Ties the different parts of the thesis together to form a whole
- It displays critical reasoning, etc.

A well structured, logical narrative with an obvious beginning, middle and end

MSc Dissertation Tips

- Start straight away!
- Ensure you have a well formed research question/problem
 - Which you can justify
 - Is succinct – one sentence ideally
 - Print it out and put it above your desk
- Stay focused on research question/problem
 - But don't be afraid to slightly shift focus - if justifiable
- Don't treat literature review as an afterthought

MSc Dissertation Tips

- Be very aware of “scope creep”
- Plan your time
 - Simple project plan – Excel or Word will do
 - How can a software project be a year late?
 - “one day at a time” – Fred Brooks, The Mythical Man Month, 1975
- Draft a table of contents early on
 - Summary of each section
 - Helps maintain focus

MSc Dissertation Tips

- Can you clearly identify your hypotheses?
- Revisit and refine your COMPGA11 literature review
 - Will need rewriting to refocus it to fit in with the dissertation approach and structure, and page limits
- User studies take time and effort
 - Plan well in advance!
- Get someone to read it
 - Someone not expert in the field

MSc Dissertation Tips

- Keep in regular contact with supervisor(s)
- Do not expect supervisor to solve problems for you or tell you what to do
- Try to think of possible solutions to discuss with your supervisor

COMPGA11 Literature Review

Example of Peer-to-Peer (P2P) File Sharing Literature Review

COMPGA11

P2P technologies

What is P2P?

History of P2P

What is motivation for
P2P?

P2P file-sharing

Good/bad use
of P2P

Problems with P2P

Summary of research
into problems of P2P

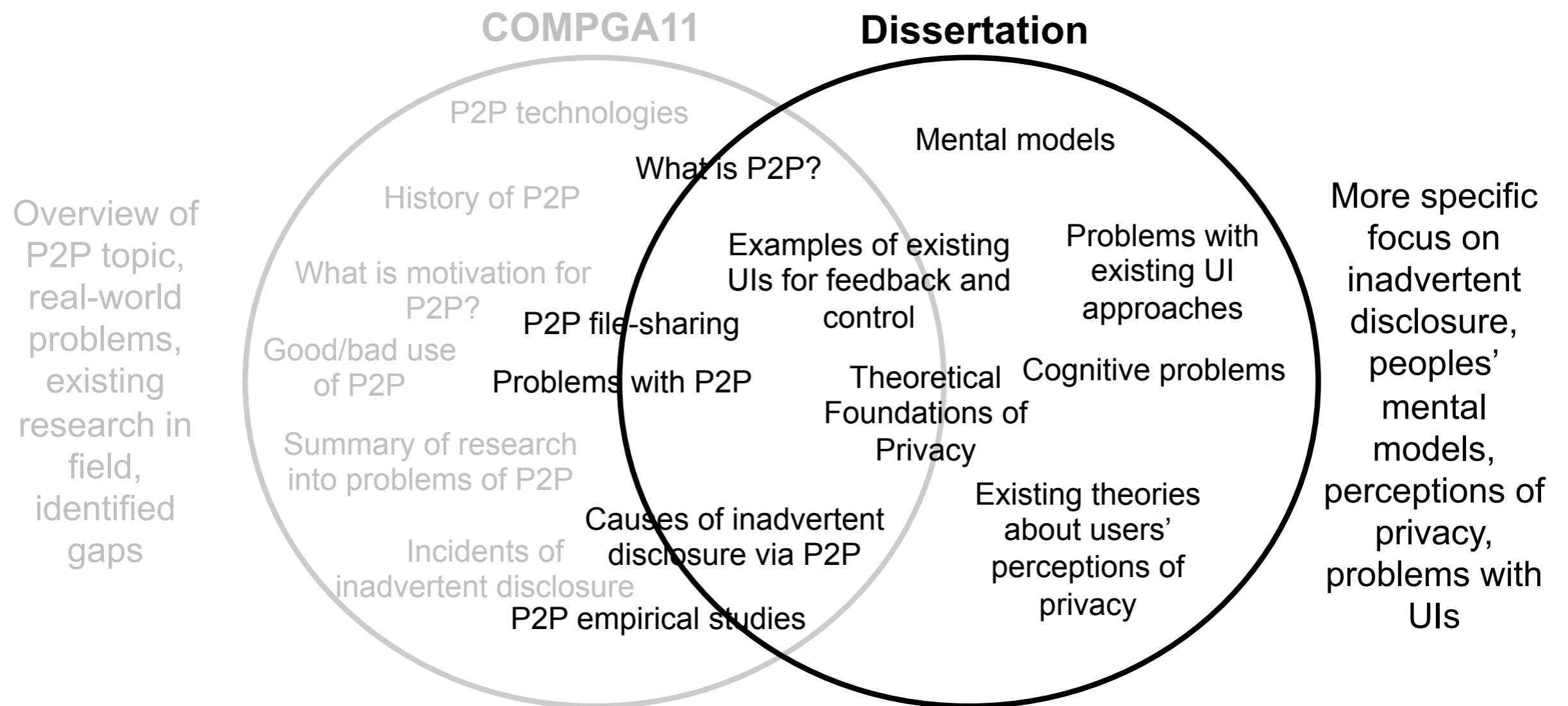
Causes of inadvertent
disclosure via P2P

Incidents of
inadvertent disclosure

P2P empirical studies

Overview of
P2P topic,
real-world
problems,
existing
research in
field,
identified
gaps

Dissertation Literature Review



Caveat: This list is not exhaustive!

Dissertation Literature Review

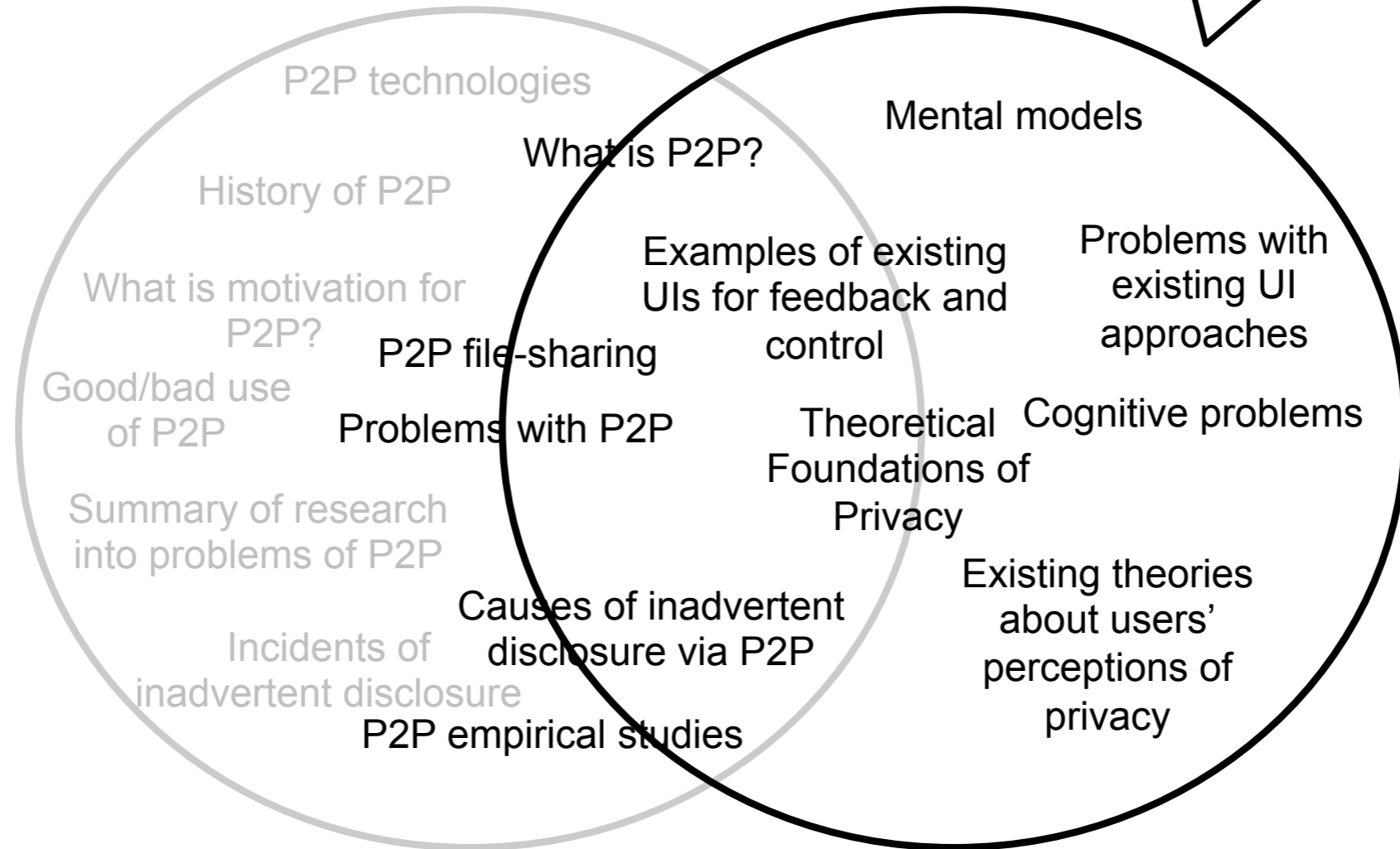
Structured by a) technology and history; b) real world problems; c) studies into problems.....

Structured by a) inadvertent sharing, b) privacy perceptions; c) privacy theories; d) UIs; e) studies into UIs and privacy perceptions.....

COMPGA11

Dissertation

Overview of P2P topic, real-world problems, existing research in field, identified gaps

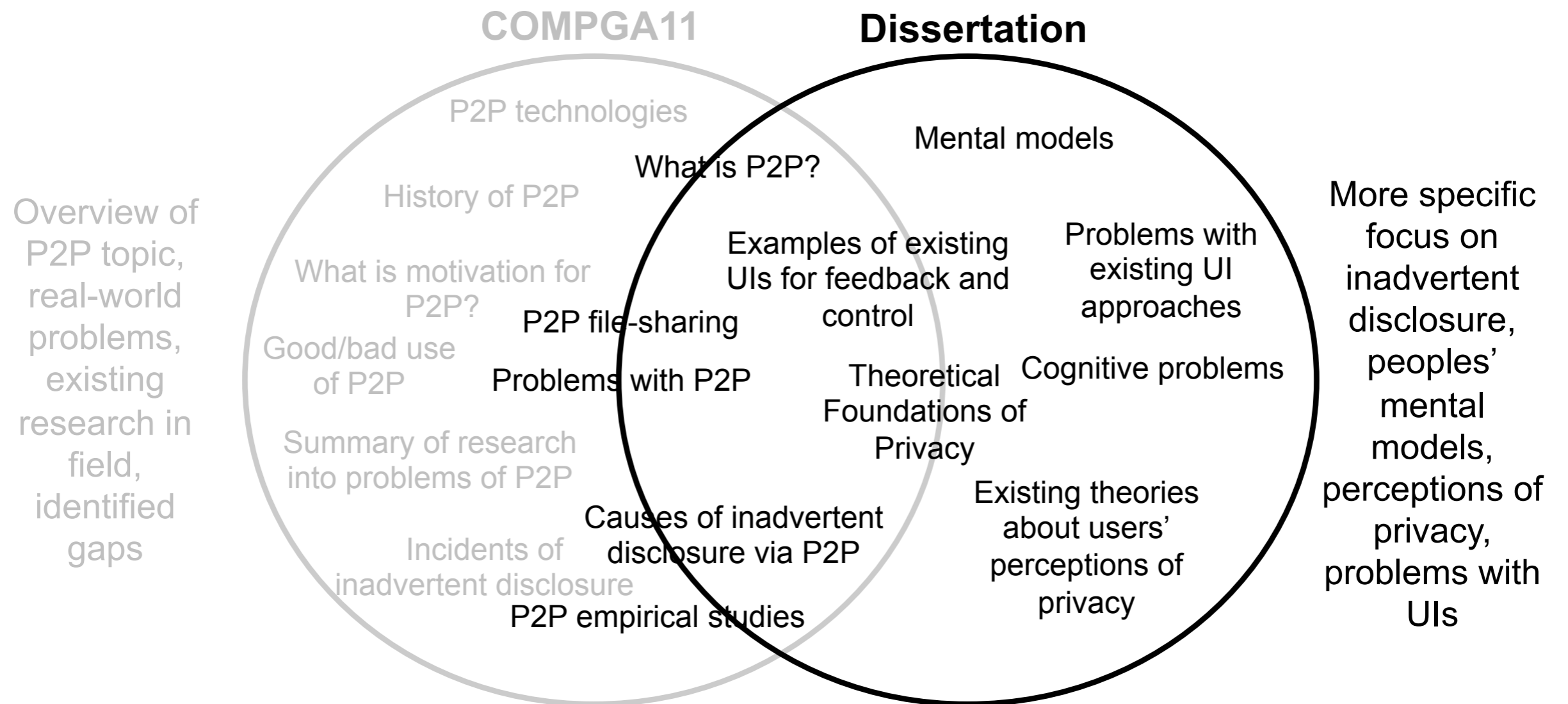


More specific focus on inadvertent disclosure, peoples' mental models, perceptions of privacy, problems with UIs

Caveat: This list is not exhaustive!

Dissertation Literature Review

COMPGA11 lit. rev. **informs** dissertation lit. rev (but they must be different)



Caveat: This list is not exhaustive!