Feedback

- Significant improvement so far
- There is more to critical review than the paper's writing
- Put work in the context of other work

Which Papers Are Accepted?

- A **good** paper is:
  - Great, novel idea – major step forward
  - Thorough work and documentation
  - Good adherence to scientific method (if applicable)
  - Well written and easy to understand
- A **bad** paper is:
  - Not such an interesting, new idea – small progress
  - Repeat of previous work
  - Poor adherence to scientific method (if applicable)
  - Poorly written
- Reality = many in between good and bad

Review Process May Not Be Perfect

- Ideally reviewer is expert in the topic and checks all details thoroughly, but
  - Paper may be assigned to wrong reviewer
  - No expert available
  - Lack of time
  - A reviewer may have 30 papers to read
    - (+lecturing, research, writing their own papers, meetings...)
- More reviewers to catch errors in judgement
  - Sometimes reviewers disagree
- Remember shortcomings in peer review process

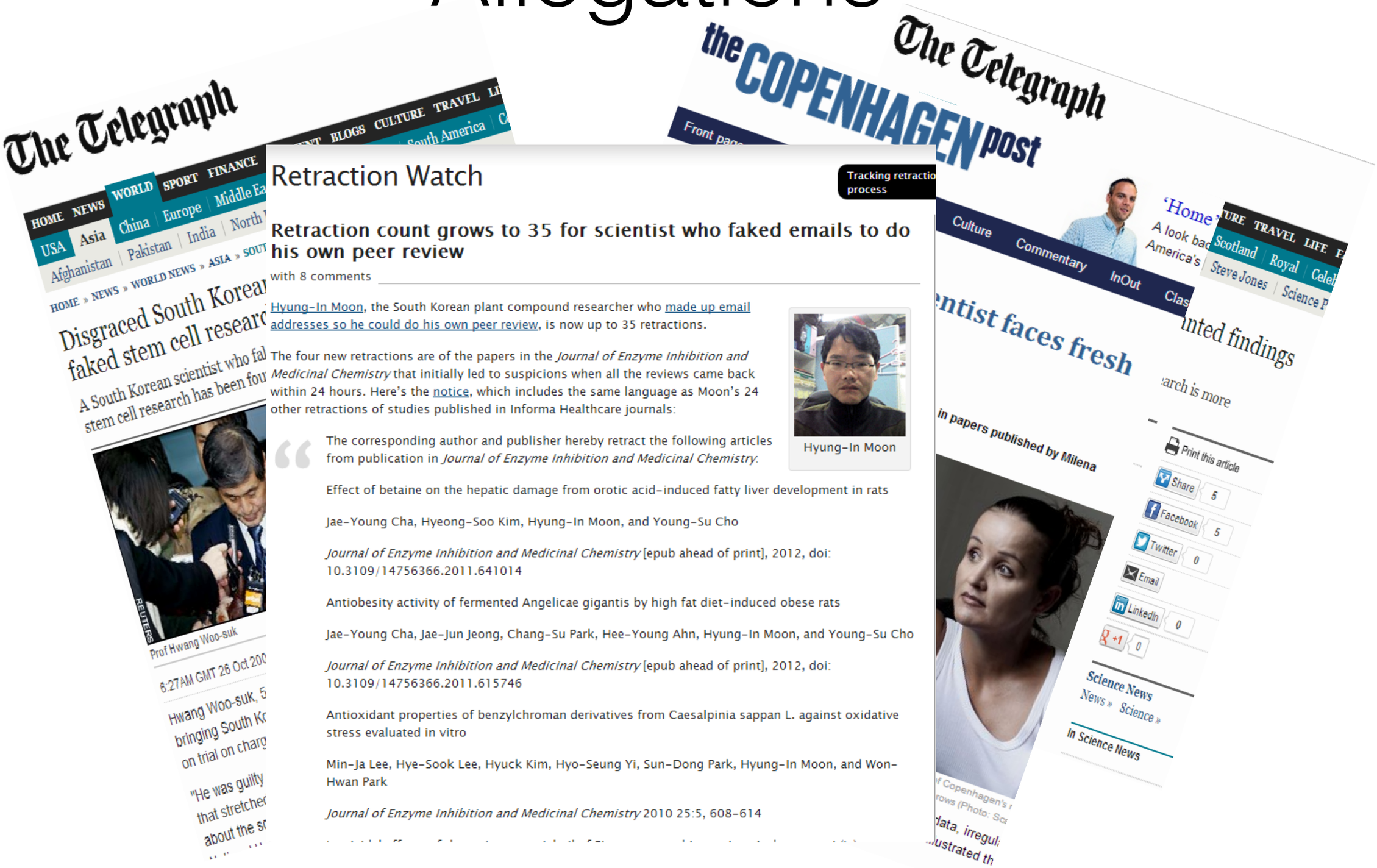
Authors May Not Be Perfect

- Authors have other goals
  - May not be seeking truth and doing good science
  - Hiring, promotions, grants, money...
  - Pressure from mantra of “publish or die”

- Biased authors
  - Authors may oversell or manipulate results

- Balancing effects
  - Reviewers

Academic Dishonesty – Recent Allegations



Still Better Than Alternative

- Scientific Article
  - Provides data/evidence for claims
  - Peer-reviewed
  - Open to scrutiny and verification by readers

- Compare with
  - Commercial publications
    - Beware vendors' white papers
  - Newspaper and magazine articles
    - Drama and exaggeration sells more newspapers

Academic Research in the 21st Century: Maintaining Scientific Integrity in a Climate of Perverse Incentives and Hypercompetition (Edwards and Roy)

Table 1. Growing Perverse Incentives in Academia

Incentive	*Intended effect*	*Actual effect*
‘‘Researchers rewarded for increased number of publications.’’	‘‘Improve research productivity,’’ provide a means of evaluating performance.	‘‘Avalanche of’’ substandard, ‘‘incremental papers’’; poor methods and increase in false discovery rates leading to a ‘‘natural selection of bad science’’ (Smaldino and Mcelreath, 2016); reduced quality of peer review
‘‘Researchers rewarded for increased number of citations.’’	Reward quality work that influences others.	Extended reference lists to inflate citations; reviewers request citation of their work through peer review
‘‘Researchers rewarded for increased grant funding.’’	‘‘Ensure that research programs are funded, promote growth, generate overhead.’’	Increased time writing proposals and less time gathering and thinking about data. Overselling positive results and downplay of negative results.
Increase PhD student productivity	Higher school ranking and more prestige of program.	Lower standards and create oversupply of PhDs. Postdocs often required for entry-level academic positions, and PhDs hired for work MS students used to do.
Reduced teaching load for research-active faculty	Necessary to pursue additional competitive grants.	Increased demand for untenured, adjunct faculty to teach classes.
‘‘Teachers rewarded for increased student evaluation scores.’’	‘‘Improved accountability; ensure customer satisfaction.’’	Reduced course work, grade inflation.
‘‘Teachers rewarded for increased student test scores.’’	‘‘Improve teacher effectiveness.’’	‘‘Teaching to the tests; emphasis on short-term learning.’’
‘‘Departments rewarded for increasing U.S. News ranking.’’	‘‘Stronger departments.’’	Extensive efforts to reverse engineer, game, and cheat rankings.
‘‘Departments rewarded for increasing numbers of BS, MS, and PhD degrees granted.’’	‘‘Promote efficiency; stop students from being trapped in degree programs; impress the state	‘‘Class sizes increase; entrance requirements’’ decrease; reduce graduation requirements

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 or… information security prob…
- Describes wh… tant
- Describes re… ady been done in the area ar… art currently is
- Proposes sol… al evaluation of the propos…

Observation, Problem Definition & Initial Data Gathering

Literature Review

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 solu

Discussion

- May point to f arch 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 di ether to form a whole c

- It display cal and 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

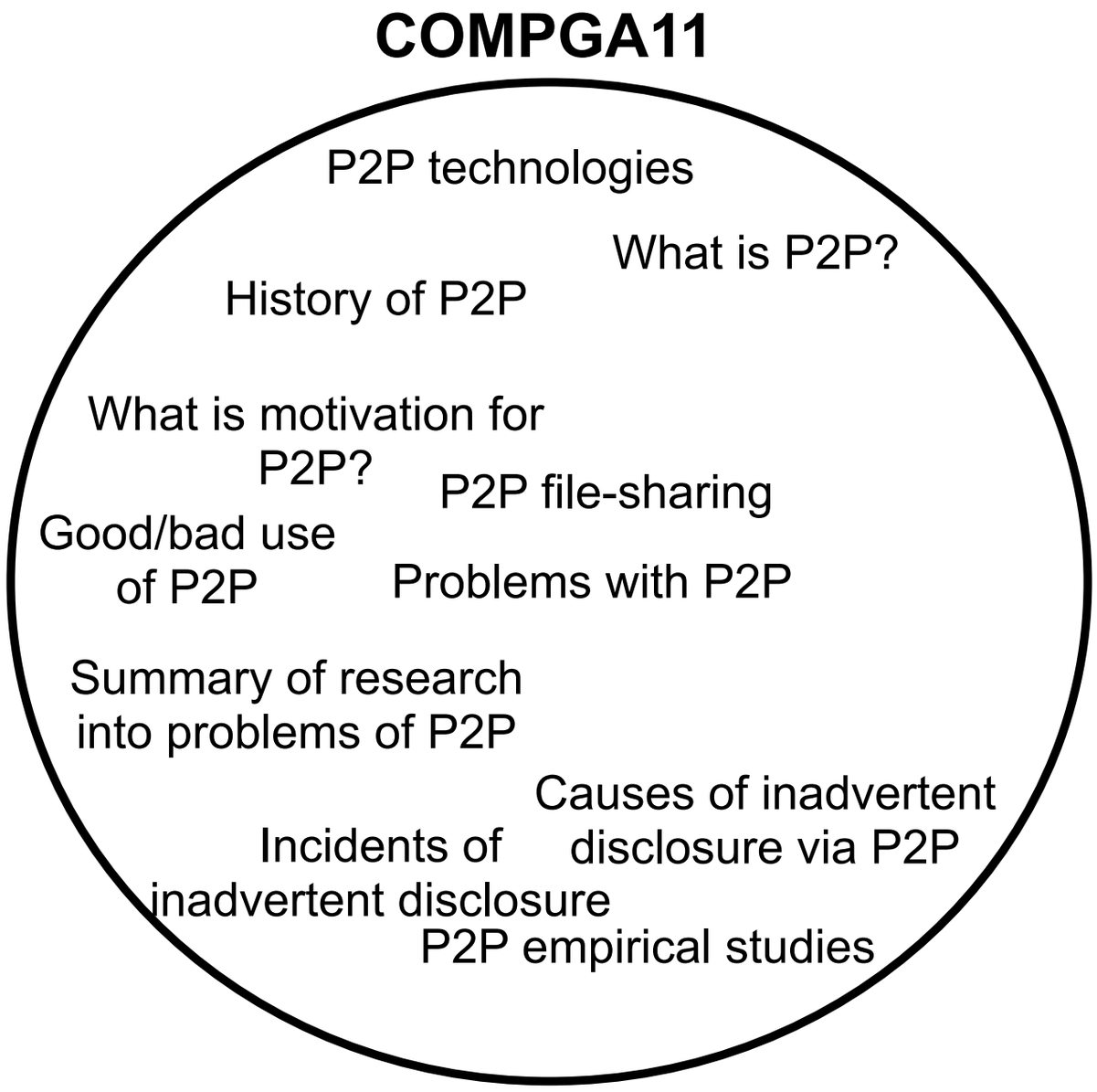
MSc Dissertation Tips

- 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

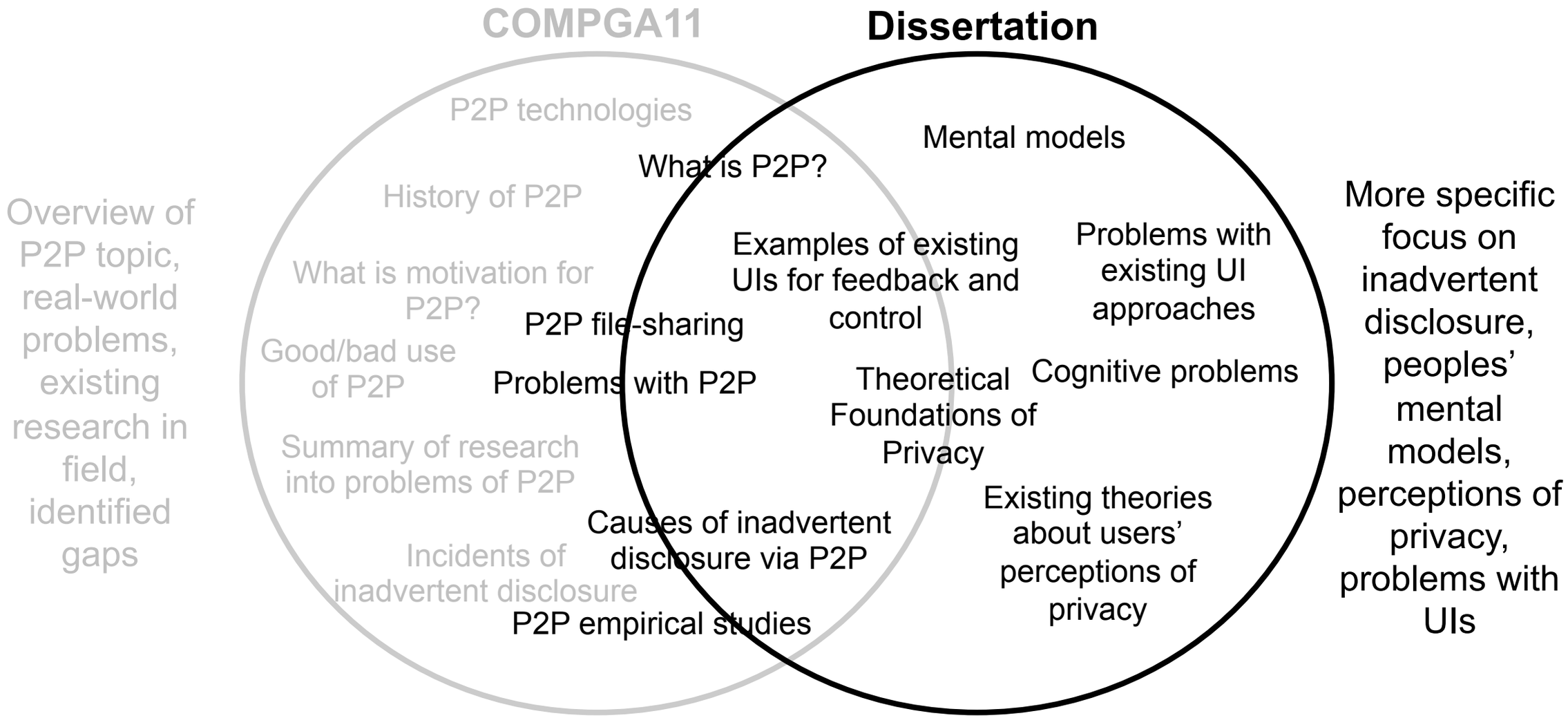
COMPGA11 Literature Review

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

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

P2P technologies

What is P2P?

History of P2P

What is motivation for P2P?

Good/bad use of P2P

Summary of research into problems of P2P

Incidents of inadvertent disclosure

P2P empirical studies

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

Dissertation

Mental models

Examples of existing UIs for feedback and control

Problems with existing UI approaches

P2P file-sharing

Problems with P2P

Theoretical Foundations of Privacy

Cognitive problems

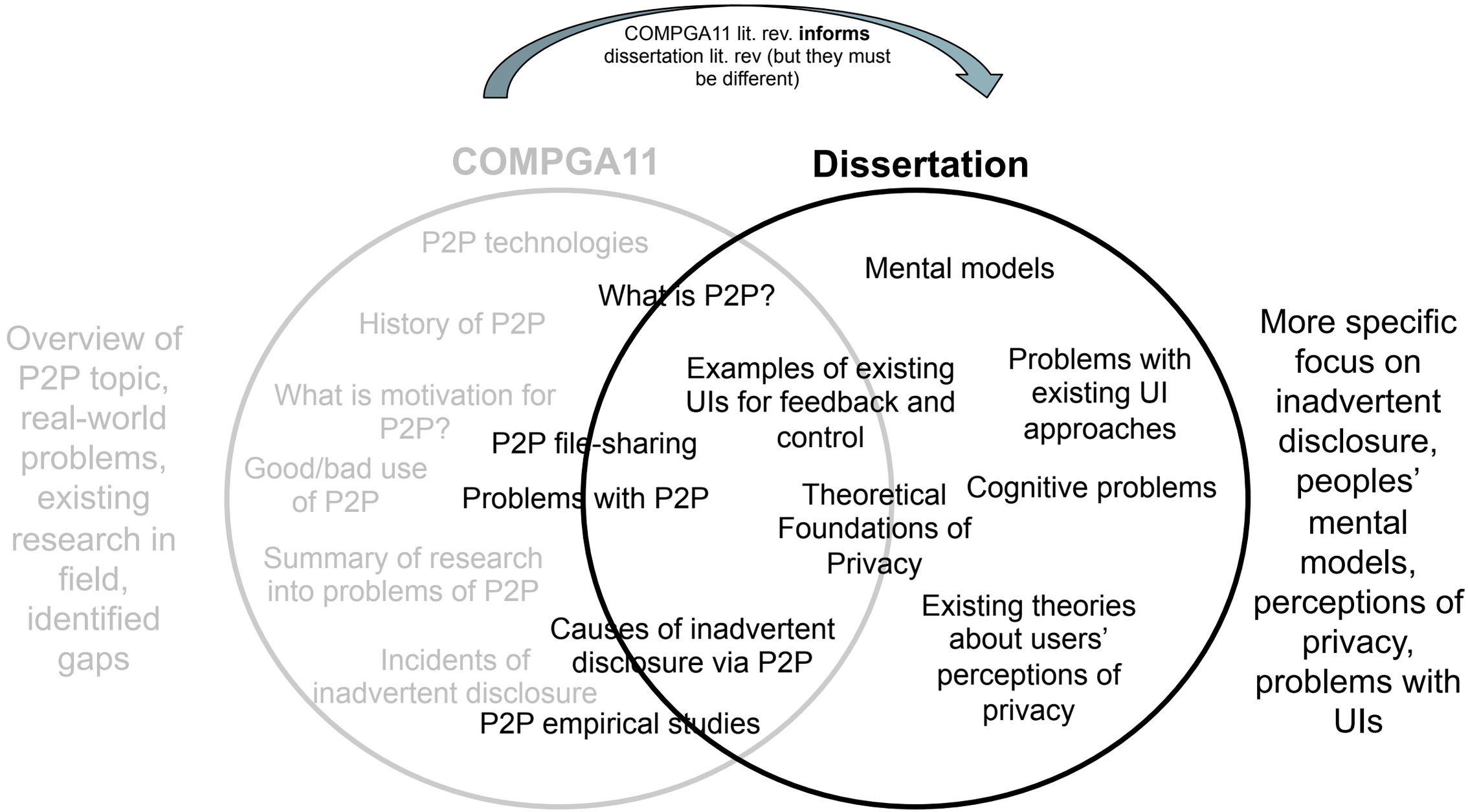
Causes of inadvertent disclosure via P2P

Existing theories about users' perceptions of privacy

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

Caveat: This list is not exhaustive!

Dissertation Literature Review



Caveat: This list is not exhaustive!

Literature review marking

- 1. Understanding of papers reviewed (motivation, main points included and appropriately weighted, arguments grasped)
- 2. Background reading (discovery of relevant literature, understanding of context, awareness of impact of papers reviewed)
- 3. Clarity of presentation of literature review (organisation, use of citations, ease of understanding explanations, precise technical language)
- 4. Analysis (critical analysis, added value, e.g., new points not given by papers reviewed, errors in papers reviewed or identification of different approaches, difficulty/depth)

Consider what to use from what you have learned in this course

Critical analysis of papers in literature review

- Topics covered in this course
  - Appropriateness of methodology
  - Appropriateness of structure and presentation
  - Appropriateness of research design (e.g. experiments, quantitative or qualitative data)
  - Appropriateness of analysis techniques
  - Appropriateness of means to manage bias
  - Appropriateness of ethical considerations

Literature review submission

- Due Wednesday April 26th 2017 at 5pm
- Must be in PDF format, maximum 30MB
- Submit via Moodle “COMPGA11 Literature Review”
- If you are late submitting your COMPGA11 literature review, it will receive a deduction of at least 10% in the mark. Penalties increase after two working days
  - Technical problems at your end are not a valid excuse. Submit early and test!

Paper review process

- Paper assigned to one or more reviewers
  - Perhaps selected from a group
  - Perhaps solicited based on paper topic
- Each reviewer independently reviews paper
- Reviewers discuss (in person or online)
  - Opinions may be changes, reviews might not be updated
- Process may be repeated in multi-round cycles, possibly with new reviewers

Author rebuttal

- Between two rounds, authors see reviews and are invited to comment
- Major benefit is ability to correct factual errors
- Also an opportunity to point out good aspects of the review
- Effect of rebuttals is debatable, and probably has little impact for the average paper

Re-submission

- Rejected papers can be submitted to another venue, or to the same venue if permitted for hybrid/ journal venues
- May be reviewed by same reviewers, different reviewers or with some overlap
  - Even if submitted to an entirely different venue
- Authors are strongly encouraged to fix issues

Shepherding

- One person (usually a reviewer) is selected to ensure some important changes are made
- Paper cannot be accepted until shepherd is happy
- Shepherded papers are almost always accepted; exceptions:
  - Authors strongly disagree with the reviewers
  - Reviewers asked for too much
  - Failures of communication between shepherd and authors

Camera-ready

- Name comes from photo-lithography
- Authors need to prepare a version to be published in the proceedings/pre-proceedings
- Encouraged to make changes proposed by reviewers
  - and during conference, in the case of post-proceedings
- No checking performed, except perhaps by chair
  - Major changes are not permitted except by permission of chair
- Authors must comply with technical requirements
  - embedded fonts, file size, margins

Edited version

- Some publication venues will edit submitted papers
- Light touch editing
  - Fixing style
  - Using standard citation format
- More substantial
  - Re-phrase significant parts of article
  - More common for non-academic articles
- Editing may make article worse; complain (within reason)

Open-access version

- Funders may require that article is made available open-access
  - e.g. via institutional repository
  - HEFCE (UK) and NSF (US) are the latest to require this
- Publishers tried to fight this but are mostly falling in line, but rules vary
  - May require payment
  - May require embargo period
  - If edited or typeset by publisher, only the submitted version can be used

Reviews

- For next week, please look at on Moodle
  - Privacy is a Process, not a PET – A Theory for Effective Privacy Practice (accepted)
  - Too close for comfort: a study of the effectiveness and acceptability of rich-media personalized advertising. (accepted)
  - My privacy when adopting a technology – I know what's important to me (rejected)
  - Would You Sell Your Mother‘s Data? Personal Data Disclosure in a Simulated Credit Card Application (rejection/accepted)