Summary lectures, articles and exam questions

Essentials of Media Psychology (Vrije Universiteit Amsterdam)

CONTENT

SESSION 1 – INTRODUCTION: WHAT IS MEDIA PSYCHOLOGY AT VU?

We live invested in an electric information environment that is quite as imperceptible to us as water is to fish (McLuhan, 1969)

MP at micro level: individual/factors
MP at miso level: physical, socio-cultural and community environments
MP at macro level: policies and government

Definitions – Media psychology is the scientific study…

- … of human behaviour, thoughts and feelings experienced in the context of media use and creation (Dill, 2013)
- … of the cognitive processes and behaviour involved in the selection, use, interpretation and effects of communication across a variety of media (Okdie et al, 2014)

➔ There is no consensus on definitions because both ''media'' and ''psychology'' are themselves broad
➔ Communication, cognition and emotions are pretty fundamental to human experience and therefore have, by definition, foundations in psychological thought
➔ A field that changes every time iTunes releases a new mobile app: the field must be representative of not only the work currently being done, but also the work that needs to be done
➔ The constant theme across these definitions is that media psychology is fundamentally concerned with understanding behaviour, cognitions and affect as related to media use, processing and effects

Media x User = Situation x Person

Psychology in movies	Psychology in viewer
Observing human behaviour in its many ways, shapes and forms	Processing media - Attention - Understanding (characteristics like traits, gender and age) - Feeling

Analytical structure

Before use	During use	After use
- Motivation - Selection - Needs	- Processing - Underlying mechanisms	- Effects - Consequences

Media psychology research

- How and why do messages have effects on whom, under which circumstances?
  No uniform media messages → No uniform effects!
- Media psychology research is about <u>understanding</u> processes that lead to effects – moderating and mediating variables

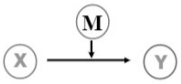
Media psychology theories

- Theories reduce the complexity of reality
- Theories link concepts in order to explain something
- They <u>describe, explain and predict</u>
- Theories can be modelled

Main effects models 

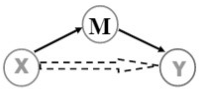
- Simple causal effects
- X affects Y
- IF X, then → Y
- More X → more Y

Moderation models::



- X affects Y
- However, the effect is qualified by the moderator M
- While M may have no original effect on Y
- M is independent of X
- Statistical test with interaction terms
- Analysis: (M)ANOVA: interactions, covariance

Mediation models:



- X affects Y
- However, the influence is transmitted via mediator M
- Thus, X → M → Y
- While original effect of X → Y disappears/decreases
- Statistical test in steps with hierarchical regression (Baron & Kenny, 1986), however, today, with SEM, Sobel test, bootstrapped estimation

Media psychology topic areas 1999-2005

Topic areas 2006-2010

Where media psychology started

- Media Psychology (Bryant & Ewoldson, 1999) → all kinds of media
- Media Pyschology (the journal) → media use, processes and effects
- The Journal of Media Psychology (1988) → mostly new media
- Pyschology of Popular Media Culture
- The Oxford Handbook of Media Psychology (Dill, 2012) → many psychologists contributed, with a marked interest in media

Okdie et al (2014) – Missed programs (you can't TiVo this one): why psychologists should study media
There's an underrepresentation of media psychology in mainstream psychological literature and in undergraduate and graduate psychology course offerings.

A psychological approach is important to the study of media because of its presence in people's lives and because psychologists use it in their research and their choices may affect the external validity of their findings.

Media psychology: the scientific study of the behaviour and cognitive processes involved in the selection, uses, interpretation, and effects of mediated communication.

Mediated communication: any communication outside of face-to-face interaction that requires mediated transmission (bv passing through a media channel). Examples: books, email, text messaging, letters, social media, television.

Not only media use increased because the types of media available have also expanded and are becoming increasingly sophisticated.

Okdie et al did a content analysis of major general psychological journals and a second analysis for graduate and undergraduate courses at the top 50 psychology programs in the United States.

There are five attributes by which media vary (in ascending order of complexity):

- Fidelity: the degree that a medium is detailed, complete, and accurate in its reproduction of the information being transmitted (bv Blue-Rays have a higher fidelity than DVDs)
  - Fidelity influences feelings of social presence within a media environment and transportation into a media world and the persuasiveness of a medium by increasing involvement, vividness, and the sense of actual engagement with the behaviours portrayed in the message
  > *Social presence*: the sensation of being drawn into the narrative
  > *Transportation*: the experience of being a part of the media story
- Privacy: the ability of individuals to hide personal information regarding identity regarding identity and characters from others
  - Privacy influences de-individuation and self-presentation
  > *De-individuation*: a psychological state characterized by low self-awareness leading to increased focus on group rather than personal norms and standards of behaviour
  > *Self-presentation*: the way we create images of ourselves to impress others
- Channels: the different senses that are used to receive or convey a message via the media (bv audio, visual)
  - Channels influence social influence, motivation, self-awareness, and persuasion
  > *Social influence*: how individuals perceive and are influenced by messages and others
  > *Self-awareness*: a psychological state of increased focus on the self
- Interactivity: the extent to which media afford individuals the ability to control or elicit responses from content provided through media, others using media, and the individual medium itself
  - Interactivity is composed of several components such as directionality and control
  - Media may vary in interactivity to the extent that they allow for the dynamic exchange of data and afford users control over content
  - Interactivity influences greater learning, attitude change, and positivity
- Content-by-attribute interactions: any data transmitted via media, with regard to the attributes of the media that deliver that content

By considering more dynamic models and by differentiating media along the proposed attribute dimensions, psychology is presented with new research opportunities that can aid in the development of more comprehensive understandings of human behaviour and of the validity of research practices themselves.

Applying the framework to the study of media will create avenues for exploring how different media may create psychological states that lead to predictable patterns of behaviour.

SESSION 2 – LEARNING FROM MEDIA

The two classic theories that guide our understanding of media learning

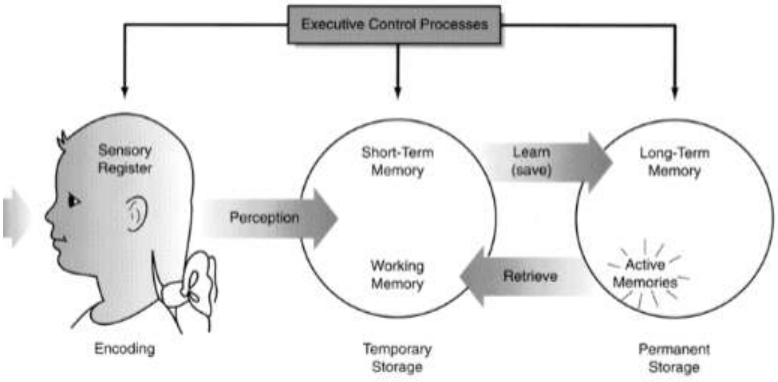
- LC4MP
- Social cognitive theory

➔ Implications of these theories for topics in media psychology: they provide foundational perspectives

LC4MP (Dr Annie Lang) = limited capacity model of motivated mediated message processing

Information processing model

- Based on metaphor of brain as computer (humans have limited memory)
- Information processing is
  - *Encoding*: selecting information from environment
  - *Storage*: creating long term representation of information
  - *Retrieval*: both in response to questions and dynamically



Resources available

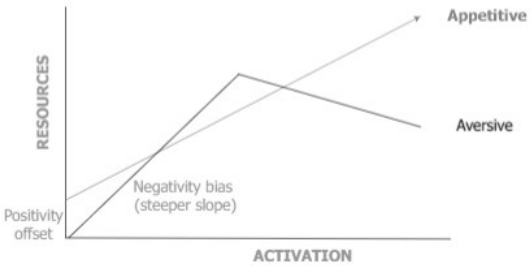
- What kinds of resources do media require: audio/visual/attention/syntactic/contextual/cognitive/ genre/time/space
- As cognitive misers, how do we allocate resources: motivational forces

Orienting response: what draws our attention?

- Attention + automatic allocation of resources to:
  - Features that are new and unexpected in present environment
  - Stimulus properties: bv vocal changes, camera changes, sudden movement, animations, colours
  - Objects that are relevant and important to us (current conscious or unconscious goals)

Two motivational forces: appetitive (a hot dude or pancakes) and aversive (snakes or barking dogs)

LC4MP – Level of resources allocated and motivational system



Limited capacity model of motivated mediated message processing

- Humans are limited capacity info processors
- 2 motivational systems: promote survival and prevent harm
- Media are continuous
- Human activity occurs over time
- Communication is ongoing and dynamic

Implications of the LC4MP

- We cannot turn off our attention
- Our learning from media is dependent on both content and individual resources
- Individuals focus on what is relevant to them
- Relevant is independent of conscious awareness – dependent on motivational processing

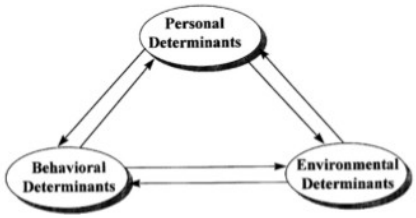
Methodologically

- Dynamic nature of information processing means: no post-hoc measures, real time measurements needed
- Lots of psychological measures: skin conductance, eye-gaze, facial EMG, heartrate, etc

Social cognitive theory (Bandura, 1986) = modelling of behaviour

- Based on early social learning theories
- Focused on imitation and vicarious reinforcement
- Developed by Bandura using the earliest Bobo doll studies
- Further refined to focus on self-efficacy, morality and eventually media

Learning of behaviour is governed by three bi-directionally linked systems →



Observational learning – Basic logic of the theory

- A person learns by observing the actions of others and the consequences of those actions
- We learn both behaviour and expected outcomes

➔ If action A is rewarded, then action A is good

➔ If action A is punished, then action A is bad

Implications for media psychology

- Obviously, imitation, learning and the decision to behave is a complex process
- Where does media fit in?
- Decisions to behave are social decisions for social actions
- Therefore, models, people and others have a large influence (parents, peers, media)

Mechanisms of observational learning

1. Attention
2. Retention
3. Motor reproduction ability
4. Motivation to reproduce behaviour

Motivation to reproduce

- External incentives
- Vicarious incentives
- Self-incentives
- Observer attributes (internal standards, social comparison)

Self-reflection, self-efficacy and self-regulation

- Reflection: humans perceive and evaluation their own cognitions, affect, and behaviour. We can assess the adequacy of these actions by; enactive vicarious, social or logical verification

- Based on reflection, we form self-efficacy. Our belief that we can successful engage in action. Very critical part of SCT; powerful predictor of behaviour
- We set self-standards and strive to meet them. Standards can be adjusted (proactive control) or satisfied (reactive control)

Abstract modelling: rules of previous learned behaviour generate new behaviours in related situations
→ If it was okay for John to punch Jack for stealing his wallet on television, it's probably okay for me to punch Josh for stealing my soda

Effects of modelling – Observing action that conflicts with established behaviour has two effects:

- Inhibitory effects; observation restrains a person from acting in a previously learned way
- Disinhibitory effects; observation weakens internal restraints on certain behaviours

Implications for psychology of media entertainment

- People are cognitive misers, we want to like protagonists.
- Moral disengagement so we like protagonists
  - Moral justification
  - Advantageous comparison
  - Euphemistic labelling
  - Displacement of responsibility
  - Diffusion of responsibility
  - Distortion of the consequences or action
  - Dehumanization
  - Attribution of blame

Limitations of SCT: because it so comprehensive…

- Hard to test all mechanisms at once
- Unfalsifiable: any result could be explained in some way by SCT

Take-away points

- Each individual has limited and imperfect processing power and memory
- Attention to stimuli (bv media messages) is often automatic, driven by media features, and individual capacity and motivations
- Media help make observational learning possible
- Media messages can convey rewards, moral disengagement and abstract modelling

Bandura (2001) – Social cognitive theory of mass communication
Social cognitive theory: explains psychosocial functioning in terms of triadic reciprocal causation. Personal factors in the form of cognitive, affective, and biological events, behavioural patterns, and environmental events all operate as interacting determinants that influence each other bio directionally.

People are self-organizing, proactive, self-reflecting, and self-regulating, not just reactive organisms shaped and shepherded by environmental events or inner forces.

Human nature is a vast potentiality that can be fashioned by direct and observational experience into a variety of forms within biological limits.

The plasticity, which is intrinsic to the nature of humans, depends upon neurophysiological mechanisms and structures that have evolved over time. These advanced neural systems specialized for processing, retaining, and using coded information provide the capacity for the very capabilities that are distinctly human:

- Generative symbolization
- Forethought
- Evaluative self-regulation
- Reflective self-consciousness
- Symbolic communication

Unlike learning by doing, which requires altering the actions of each individual through repeated trial-and-error experiences, in observational learning a single model can transmit new ways of thinking and behaving simultaneously to countless people in widely dispersed locales.

People's conceptions of social reality are greatly influenced by vicarious experiences (by what we see, hear, and read) without direct experiential correctives. To a large extent, people act on their images of reality. The more people's images of reality depend upon the media's symbolic environment, the greater is its social impact.

Observational learning is governed by four sub functions:

- Attentional processes: determine what is selectively observed in the profusion of modelling influences and what information is extracted from ongoing modelled events
- Retention processes: involves an active process of transforming and restructuring information conveyed by modelled events into rules and conceptions for memory representation
- Production processes: symbolic conceptions are translated into appropriate courses of action
- Motivational processes: performance of observationally learned behaviour is influenced by three major types of incentive motivators:
  - Direct motivators
  - Vicarious motivators
  - Self-produced motivators

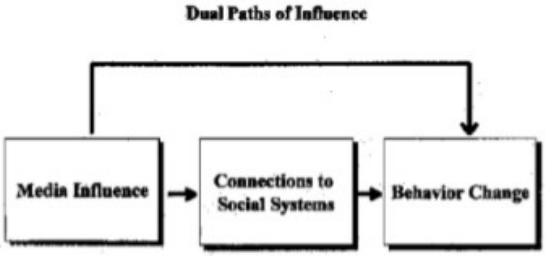
  > People are more likely to exhibit modelled behaviour if it results in valued outcomes than if it has unrewarding or punishing effects

Televised representations of social realities reflect ideological bents in their portrayal of human nature, social relations, and the norms and structure of society. Heavy exposure to this symbolic world may eventually make the televised images appear to be the authentic state of human affairs.

In effecting large-scale changes, communications systems operate through two pathways:

- Direct pathway: communications media promote changes by informing, enabling, motivating, and guiding participants
- Socially mediated pathway: media influences are used to link participants to social networks and community settings, these places provide continued personal guidance as well as natural incentives and social supports for desired changes (the major share of behaviour changes is promoted within

these milieus)



Lang (2011) – The limited capacity model of motivated mediated message processing
Limited capacity model of motivated mediated message processing (LC4MP): a data-driven model developed to investigate the real-time processing of mediated messages. It allows researchers to track the overtime interactions occurring between a message, a medium, and a user.

LC4MP has multiple strengths:

- It's applicable to all types of media (including those not yet invented)
- It's applicable to all types of messages
- It's applicable to all types of situations
- It's applicable to all types of users

LC4MP has five basic assumptions:

- Humans are assumed to be limited capacity information processors, humans have only a finite and limited supply of cognitive resources available for use at any given time
- Humans have two evolutionarily old motivational systems designed to promote survival and protect from harm: appetitive system and aversive system
- Media are conceptualized as continuous and continuously varying streams of sensory information occurring in one or multiple modalities with variable levels of redundancy among the modalities
- Human activity is conceived of as occurring over time: people act, react, and interact continuously as they move through time
- Communication: the ongoing, dynamic, continuous interaction between a message or medium and a message recipient or user

Information processing: the simultaneous, continuous, over-time operation of a least (but not necessarily only) three basic sub processes:

- Encoding: the continuous, non-veridical, idiosyncratic process of selecting information from the environment and creating a mental representation of that information
- Storage: the process of creating a long-term representation of the encoded information
- Retrieval: the process by which previously stored information is activated

The thoroughness with which each of the sub processes is carried out depends on the level of resources required to carry out the sub process and the level of resources allocated to carrying out the sub process. LC4MP posits that resources are allocated through automatic and through controlled processing mechanisms independently to the sub processes of encoding, storage, and retrieval.

Controlled resource allocation: the allocation of resources that are under control of the media user
Automatic resource allocation: not under control of the media user (one of the mechanisms through which resources are allocated automatically is the orienting response)

The orienting response allows humans to automatically, without conscious effort or thought, scan the environment for new or relevant information. The orienting response is elicited by two classes of stimuli: (1) those that are new to the environment and (2) those that a person has learned signal relevant or important information.

Content and structural elements of media that can be used to increase the automatic allocation of resources to message encoding are:

- For radio: voice changes, music onsets
- For television: camera changes, sudden movement
- For web: animation, emotional pictures, warning

Stimuli that don't increase the automatic allocation of resources to message encoding are:

- For television: pans, zooms
- For web: onset of text, onset of non-emotional pictures

Stimuli that are motivationally relevant also elicit automatic resource allocation.

LC4MP posits that the motivational and cognitive systems are interconnected and constantly influencing one another.

The level of cognitive resources allocated to processing a motivationally relevant stimulus is related to the level of activation in the motivational systems.

For messages that activate the appetitive system, relatively more resources are thought to be allocated to encoding and storage as the level of activation increases.

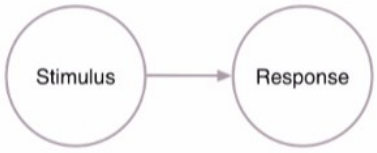
For messages that activate the aversive system, it is thought that here's an increase followed by a slight decrease at high levels of activation in the relationship between resources allocated to encoding and aversive activation. This is because initially, as aversive activation increases, many resources are allocated to encoding in order to identify the potentially dangerous stimuli. However, once that stimulus has been identified, if that identification results in continued activation of the aversive system, then resources are shifted away from encoding toward a problem solving and decision-making (how to get away).

Cognitive overload: if any of the sub processes has insufficient resources to completely carry out its task, then performance on that task will suffer. Cognitive overload is not solely determined by the number of resources required by the message but is co-determined by the number of resources required by the message.

Things about individuals, environments, media, and messages all influence what information is taken away from a media use session. However, while recognizing the complexity of the over-time interaction, LC4MP begins the process of explicating how those variables interact with one another and argues that it is indeed possible to understand, explain, and eventually predict those interactions.

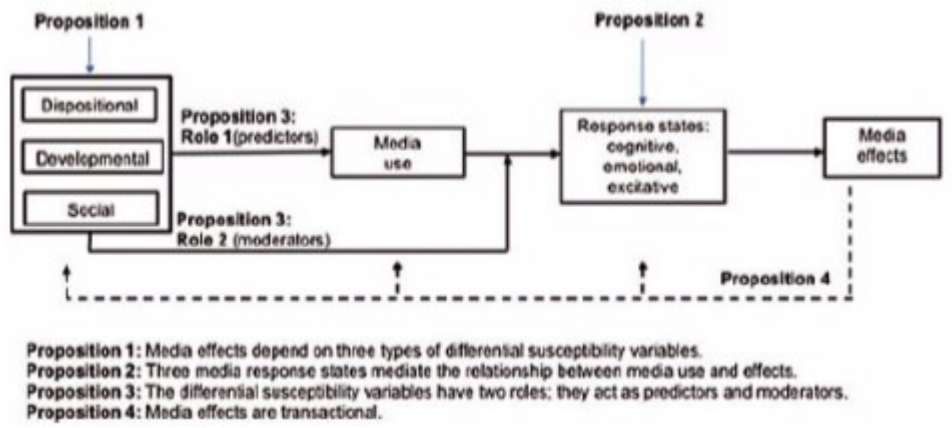
SESSION 3 – SELECTIVE EXPOSURE TO MEDIA: CHOICES AND CONSEQUENCES

S-O model (stimulus-response)



S-O-R model (stimulus-organism-response)

O-S-O-R model (orientation-stimulus-orientation-response)
For example Valkenburg & Peter (2013):



Exposure is always selective: in other words, a positive relationship exists between people's opinions and what they choose to listen to or read (Lazarsfeld et al, 1944)

Choice in media

- The unidirectional model of media effects relied on the (erroneous) long-standing assumption of the perfect audience (Okdie et al, 2014)
- Instead, individuals are able to exert control over their communication environment
- One way is by choosing what message they receive
- But what predicts these choices? Some earlier orientation?

Definitions

- Any systematic bias in audience composition (Sears and Freedman, 1967)
- Any systematic bias in audience composition for a given medium or message, as well as any systematic bias in selected messages that diverges from the composition of accessible messages (Knobloch-Westerwick, 2015)
- The selection of information matching [one's] beliefs (Stroud, 2008)

Early research – Lazarsfeld (1940)

- Erie County Study
- The People's Choice – How the voter makes up his mind in a presidential campaign

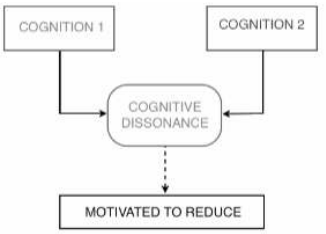
- The more interested the people are in the election, the more they tend to expose themselves to propaganda of their own party.

Early research – Klapper (1960)

- The effects of mass communication
- Media have ''limited effects''
- Because of (a) selective exposure, (b) selective perception, and (c) selective retention
  - Three sets of protective filters

Early research – Festinger (1957)

- A theory of cognitive dissonance
- Emphasizes the importance of attitudes
- Attitude-consistent vs. attitude-discrepant (consonant vs. dissonant)



Early research

- The importance of attitudes
- Cognitive dissonance implies a confirmation bias in the way we seek out, select and perceive information
- However, the psychologists Sears and Friedman reviewed the early studies of selective exposure in 1967, and we were sceptical
- Inconsistent results in the early studies
  - 18 experiments from 1957-1965
  - Attitudes toward objects such a s smoking, legal cases, diagnostic exams, political issues and political candidates
- Other explanation offered:
  - De facto selectivity (differences in situations and availability)
  - Informational utility (practical relevance for both attitude-consistent or attitude-discrepant information)
- Or, perhaps the confirmation bias is small or conditional

A rediscovery of selective exposure

- A small number of selective exposure studies were conducted in the decades after Sears and Freedman
- Until… two developments revitalized interest: (1) mood management and (2) new media

Mood Management Theory

- Zillman & Bryant (1985)
- Media are sought out for their potential to disrupt and repair undesirable affective states
- Specifies 4 aspects of media content make mood management possible
  - Excitatory potential

  - Hedonic valence
  - Absorption potential
  - Behavioural affinity
- Evidence for mood management: using television to alleviate boredom and stress; selective exposure as a function of induced excitation states
- Emotion has emerged as a critical part of media psychology
- Mood management theory accounts for how emotional needs can lead to the selection of media
- Provided important methods for measuring selective exposure

New media

- Rapid changes in media landscape from 1980s to 1990s
- Increasing amount of content and channels (cable television, internet and customization and personalization)
- Sunstein (2001): Republic.com; predicted a ''balkanization'' of news and information on the internet, with echo chambers of reinforcement
  - Because a variety of smaller more targeted information sources, combined with more user control, should lead to more selective exposure
- As a result, political selective exposure is once again a very active area of research, 70+ years after Lazars and 45+ years after Sears and Freedman
- Meta-analysis of dissonance-driven selective exposure: medium-sized effects (about Cohen's d = .36) regardless of country, topic, or method (Hart et al. 2009)
- And, selective exposure to other content (bv entertainment) is increasingly notable research

Selective exposure in the new media context

- Knoblock-Westerwick et al (2015) – Selective exposure in the communication technology context
- People often choose messages without reflection or awareness
  - So, hard to accurately measure with survey questions
  - Behavioural measures can show patterns of selectivity without problems of social desirability or poor recall
- The technology context (i.e. the medium) can be used to measure behaviour (tracking channel changing, hyperlink clicks, page views, eye movement, etc)
- In the online context, source credibility and other cues are increasingly important
  - Trust in search rankings, peer ratings and recommendations
  - Technological cues: mode of presentation, control over content, interactivity, navigation (Sundar, 2008)
  - Source prestige, recognition, slant, etc.
- Examples: discover weekly (Spotify) and personal timeline (Facebook)

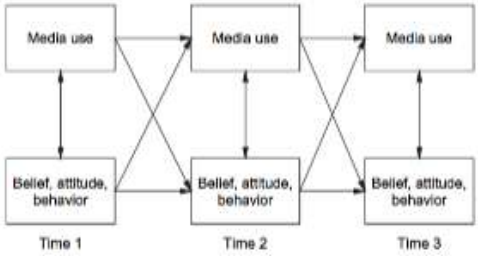
Multiple motives for selectivity

- Winter et al (2016) – Selective use of news cues: A multiple-motive perspective on information selection in social media environments
- Consistent vs balanced vs inconsistent articles
- Social recommendations
- Three motivations from the heuristic-systematic model of persuasion
  - Defense (confirmation bias, dissonance reduction, dissonance prevention, consistency)
  - Accuracy (informational, open-mindedness, ''hearing the other side'')
  - Impression(self-presentation, social, ''jumping on the bandwagon'', trying to look good to gain social rewards)

- Experiment with 146 American students
  - NSA surveillance topic
  - Participants assigned to a motivation (with script), or control group
  - Overall: more exposure to attitude consistent and balanced articles AND to highly-liked articles (but participants said they didn't choose based on this)
- Weak effects in expected directions
- Examining those with stronger attitudes showed significant effects in expected directions
- Impression motivation did not lead to choosing balanced articles, but did lead to following social likes

Outcomes of selectivity

- If people only consume messages that are consistent with their pre-existing orientations…
  - They may be incapable of change (''a new era of limited effects'' Bennet & Iyengar, 2008)
  - They may become more extreme
- Slater (2007) ''Reinforcing spirals'' →



Political polarization

- Is selectivity making people more politically extreme?
- Stroud (2010) – Polarization and partisan selection exposure
- Measured partisan media use and partisan extremity at multiple time points with a nationally representative sample of 12840 Americans during the 2004 election
- Selective exposure causes polarization: polarization also leads to more selective exposure, but less consistently
- What are the implications?
  - Selective exposure can cause effects
  - Spirals of reinforcement are possible
  - May help participation/engagement but harm tolerance/cohesion

Questions of measurement

- Commonly used measures of media exposure
  - Surveys and diaries: report what you watch
  - Surveys or experiments: pick a message
  - Experiments: observation of behaviour
  - Big data and aggregate ratings
- Measurements have different strengths and limitations
- Important to think carefully about cause and effect

Relevant areas and applications

- In what domains is selective exposure likely to have certain patterns and bias?
- Selective exposure theory and research can help communication practitioners
  - Attract audiences (for ratings and audiences)
  - Begin the persuasion process
- Application to social media and user-generated content

Knobloch-Westerwick et al (2015) – Selective exposure in the communication technology context
Selective exposure (or at the flipside selective avoidance)

Cognitive dissonance: individuals prefer messages that converge with their pre-existing attitudes to avoid unpleasant dissonance arising from cognitive inconsistencies.

Important limitation on theoretical and methodological grounds: people ae not fully aware of their motives and media selection. Because of this, they are not in the position to report their motives through survey measures.

Greater selectivity among media users: “new era of limited effects”.

Persuasion, knowledge gains or other outcomes of receiving mediated messages are likely to be minimal because audiences are able to develop media routines that only tell them what they already believe and know.

Most important for the context of this chapter, the impact of internet use on the extent of a confirmation bias in political communication is still subject for further testing.

New media technologies often initially raise hopes for better education through media, they typically have their breakthrough as entertainment equipment.

Mood management (Zillmann, 1988): media users select content to improve their moods. When bored, exciting content will be preferred to increase personal arousal states to more agreeable levels.

In brief, a number of studies have been able to demonstrate the important implications of selective exposure for media effects. Some of the findings may come as no surprise and confirm classic ideas that were proposed fifty years ago along het lines of a “limited effects” paradigm in media research. Other findings are truly innovative and break new ground – for example, Westerwick et al’s (2013) study showed that if exposure to attitude messages from high-credibility sources occurs, related attitudes are weakened.

Technology cues: website design etc
Credibility: trustworthiness, news websites, etc
Confirmation bias: to get confirmation on what you were already thinking
Social comparison: compare yourself to others (same gender comparison, low self- esteem, etc)

Winter et al (2016) – Selective use of news cues: a multiplemotive perspective on information selection in social media environments
The era of digital and social media can be characterized by an abundance of information from multiple sources and by increased opportunities for user participation. Compared with traditional mass media, Internet users have access to a much wider range of options and more control over the content they consume.

On one hand, this wealth of content offers great potential for an informed citizenry to locate relevant information with diverse viewpoints (see Dah lberg, 2011). On the other hand, people’s freedom of choice may result in the selection of content that is likely to strengthen their initial viewpoints but unlikely to enhance their knowledge.

Although most studies have looked at the effects of either information attitude-consistency or social recommendations in isolation, contemporary websites typically contain both types of information: When deciding which articles to select for further reading, users are routinely exposed to multiple cues on the stance of the text (bv supporting or opposing their view,or featuring both sides of a debate) and also to others’ reactions toward the available messages. The present research aims to investigate the question of how these diverse cues affect users’ selective exposure to political articles and under which conditions readers pay attention to different types of cues.

As a potential explanation of attitude-consistent choices, many studies refer to cognitive dissonance theory (Festinger, 1957), which states that inconsistencies in one’s beliefs arouse mental discomfort: exposure to like-minded content (selective approach) could help to reduce these aversive states, and selective avoidance of attitude-inconsistent content would prevent further dissonance.

Readers will select articles with a high number of recommendations more frequently than articles with a low number of recommendations.

The basic assumption is that accuracy -motivated readers carefully scrutinize information (systematic processing) or, in situations in which their general motivation is lower, use the best available heuristic.

Accuracy-motivated readers will show a stronger preference for balanced articles than defence-motivated readers and readers with generally lower motivation (ie the control group).

Accuracy-motivated readers will show a higher selection rate of attitude-inconsistent articles than readers in other motivational states → not supported by data.

Although accuracy-motivated readers might come closest to the ideals of an informed citizenry, a large body of research (bv Kunda, 1990) has shown that people are often driven to preserve their self-concept or worldviews, which may happen consciously or unconsciously with the illusion of still being objective.

Defence-motivated readers will show a stronger preference for consistent articles than readers in different motivational states.

Defence-motivated readers will show the weakest preference for attitude-inconsistent information with a high number of recommendations.

Impression-motivated information selection: an orientation toward holding and expressing beliefs dictated by the current interpersonal situation. Under these circumstances, individuals may adjust their information processing to arrive at a conclusion that helps them to make a positive impression on others. For instance, if one knows the interaction partner's opinion, best strategy would be to hold and express the same opinion, as agreement typically facilitates liking. However, in most cases, the opinions of a potential interaction partner or a broader audience are not fully known. In that case, one could express a moderate opinion, which would reduce the danger of high levels of disagreement and allow greater flexibility toward both sides.

Discussion: this study investigated selective exposure to news articles on contemporary social media sites, in the pursuit of two main goals. First, we aimed to examine the relative importance of message cues (one-sided [attitude consistent and inconsistent] as well as balanced articles) and social cues (in the form of the number of Facebook likes), as they can be found in juxtaposition in current cue-rich environments. Second, we analysed whether the consideration of specific news cues in the selection of information depends on situational motivations of the reader (ie accuracy, defence and impression motivations).

Consistent with the HSM's prediction that when the desire to preserve one's beliefs is salient readers particularly privilege congenial information, defence motivation amplified the confirmation bias among participants with a clear pro or con opinion toward the topic: readers tried to bolster their opinion and prepare for a discussion in which they expected disagreement.

SESSION 4 – SELECTIVE EXPOSURE TO MEDIA: FAST AND SLOW CHOICES

Dual Process Model of Human Behaviour (Strack & Deutsch, 2004)

- Impulsive system
  - Automatic
  - Associative
  - Shortcut: fast!
  - Uncontrolled
  - Bound to situation (bv present cues)
- Reflective system
  - Conscious
  - Elaborate: slow!
  - Controlled
  - Abstract (bv simulation of future)
- Simultaneously running processes in brain
- May mutually influence each other
- Impulses may be controlled – but difficult
- Use of automatic system to save energy (effort)
- Use of reflective system only if necessary (bv novel situation)

Media choice from a dual system perspective

- Reflective system
  - Planned use and elaborated choices
  - Heuristic choices as mental shortcuts
- Impulsive system
  - Habitual choices
  - Impulsive choices

Planned media use (bv Theory of Planned Media Behaviour – Hartmann, 2009)

- Intention (goal)
- Implementation intention (action plan: when, where how)
- Monitoring and shielding of action plan
- Investment of effort, self-regulation
- What are typical conditions: relevant choice, uncertain outcome, novel choice, high investment, high-risk

Taking a decision: elaborate media choices (Rayburn & Palmgreen, 1984)

- Conscious, elaborate, rational choice
- Expectancy-value calculations
  - What are my options? Say 10 movies
  - For each movie: how likely is aspect X_1 … X_5 (expectancy) * how important is aspect X_1 … X_5 (value)
  - Bv X_1 = suspense, X_2 = ticket price, X_3 = crowded cinema, X_4 = distance location, X_5 = review score
  - Take option with highest expectancy-value sum score
- Assumption: people are aware of all options, fully think them through, and take the best (''unbounded rationality'')

Boundaries of reflective system / media choices (bv Russel H. Fazio, 1990)
Reflective system only activated if…

- Motivation exists to process deliberately: bv motivation to take most accurate decision (best film), to minimize risks (expansive festival ticket), to successfully navigate through novel situation (watch start of new series)
- Opportunity exists to process deliberately: enough time (no immediate response required), enough cognitive resources (not fatigued or cognitively overloaded)

Boundaries of reflective system/media choices: *ego-depletion*; lack of a cognitive resource

- Executing self-control draws on a limited resource, if exhausted ego-depletion (Baumeister et al, 2008)
- ''Long-term goals'' and ''planning'' fails
  - Ego-depleted choose tempting (forbidden) chocolate cake over (healthy) fruit salad) (Bruyneel et al, 2006; Shiv & Fedorikhin, 1999)
  - Creature comforts: ego-depleted prefer (silly) feel-good media content over (serious) complex media content (Eden et al, under review)

Beyond reflective media choices – ''energy saving'' mechanisms
If motivation and/or opportunity to make reflective choice is low…

Heuristic media choices (Marewski et al, 2009)

- Triggered if novel situation = limited knowledge; but also: if limited motivation and/or opportunity
- ''Bounded rationality'': good decisions based on simple cognitive strategies, namely heuristics
  - ''Mental shortcuts''
  - Fast (''satisficing'')
  - Frugal (need limited info)
  - ''Adaptive toolbox''

Heuristic media choices: recognition heuristic (Marewski et al, 2009)

- Search: which alternative is recognized?
- Stop: once all alternatives are classified
- Decision: take the recognized alternative (only works for choice if only one alternative is recognized – else ''consideration set'')
- Adaptive: recognized items are usually more popular, because they are more frequently communicated (note: people only rely on heuristic if recognition-criterion link ''makes sense''

Heuristic media choices: fluency heuristic (Marewski, 2009)

- Search: which alternative is recognized more quickly?
- Stop: once retrieval time is established

- Decision: take the more quickly recognized alternative (or form ''consideration set'')
- Adaptive: more quickly recognized items are usually more popular, because they are more frequently communicated

Heuristic media choices: take-the-best (Marewski et al, 2009)

- Search: based on validity order of cues, how well each cue predicts unknown outcome bv, 1) reviewer score [higher], 2) genre [action], 3) release date [recent], 4) colour of poster [darker] – cues are checked in decreasing order of validity
- Stop: once a cue is found that differs between alternatives
- Decision: take the alternative with the favourable cue (or form ''consideration set'')
- Adaptive: items possessing favourable cue have been learnt to lead to desired outcome

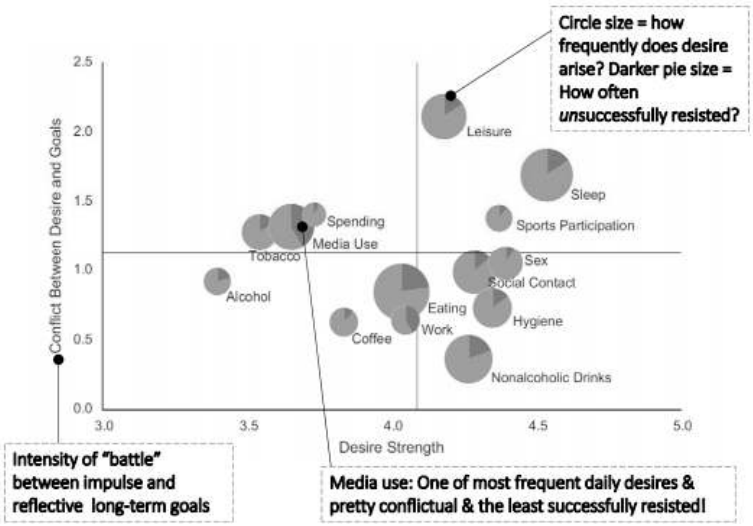
Media habits (LaRose, 2010)

- *Media habit*: ''Form of automaticity in media consumption that develops as people repeat media consumption behaviour in stable circumstances.''
- Habits as deficient self-regulation: lack of awareness (mindless) = lack of controllability
- Cues, bv sight of newspaper, trigger habit (shortcut)
  - Goal stability: ''To prepare my work, I always…''
  - Context stability: ''Every morning…'' or ''If I enter my living room, …''
- Habit reduces reflection of alternatives (mindless decision) → considering TV as only option in the evening
- Habit follows from unintended use: novel media use → intended use → repetition (in stable circumstances) → habit (triggered by cues)
- Habit diminishes power of intention
- (Bad) habit may be corrected based on strong intention, willpower (but better: change of context, ''move TV to new room'')

Impulsive media use (Hoffman et al, 2009) – Impulse

1. Arises if global motivation (bv thirst) meet activating stimuli in a situation (bv glass of lemonade)
2. Simple pleasure response
3. Short-term fulfilment possible (in here and now)
4. Impulse automatically triggers behaviour (or an urge/desire, if behaviour cannot be carried out immediately)
5. Battles with self-control (temptation)

Best Friends: impulses and desire/temptations (Hoffman et al, 2013)



Do habits follow from impulses? Some scholars think so: Gardner (2013)

- ''Habit is a process by which a stimulus generates an impulse to act as a result of a learned stimulus-response association.''
- Behaviour initiated mindlessly if no conflicting (higher-order) reflective goal exists AND if behaviour can be immediately carried out
- Aware (and impulse may be regulated if sufficient willpower) if conflict OR behaviour cannot be carried out

Take-home messages

1. Media choice resulting from (a battle of) two processing systems
2. Reflective system: intention, extensive decisions and self-regulation
3. ''Energy saving'' heuristic shortcuts and automaticity
4. Impulsive system: habits (and impulses)
5. It also depends on situation (bv new vs familiar) which system is triggered and who wins the battle

Marewski et al (2010) – Fast and frugal media choices

The fast and frugal heuristic approach is a framework that has proven to be fruitful for studying decision-making in tasks that parallel those occurring in media choice.

The study of unbounded rationality asks the question: if people were omniscient and omnipotent, that is, if they could compute the future from what they know, how would they behave?

Bounded rationality view: people rely on simple strategies to deal with situations of sparse resources. Our resources are limited.

Resources: time, knowledge, and computational power.

Heuristic-and-biases framework: a research program often associated with the bounded rationality view which proposes that humans rely on rule of thumb, or heuristics, as cognitive shortcuts to make decisions. In this

tradition, the term bounded rationality mainly refers to the idea that limitations in our cognitive abilities, in our knowledge, and in other reasoning resources produce errors, biases, and judgmental fallacies.

In the fast and frugal heuristic framework the term bounded rationality conveys the idea that by exploiting the structure of information available in the environment, heuristics can lead to good decisions even in the face of limited knowledge, computational power or time. The fast and frugal heuristic program focuses on three interrelated questions:

- Adaptive toolbox (descriptive): what heuristics do organisms use to make decisions and when is a particular heuristic used?
- Ecological rationality (prescriptive): to what environmental structures is a given heuristic adapted, that is: in what situations does it perform well?
- Practical applications: how can the study of people's repertoires of heuristics and their fit to environmental structure aid decision-making?

Recognition correlation: recognized alternatives tend to have higher criterion values than unrecognized ones. If the recognition correlation is zero, it is not ecologically rational to rely on heuristics that exploit a sense of recognition.

Each heuristic is a specialized tool for specific tasks. The use of a given heuristic from the adaptive toolbox is only ecologically rational when the environmental structure to which it is adapted is encountered. Humans and other organisms choose among the heuristics in their toolbox as a function of the environment.

The adaptive toolbox has three heuristics. All three have in common that they base decisions on just one piece of information (as opposed to weighting and adding all possible pieces, as assumed by subjective expected utility models):

- Recognition heuristic: inferring which of two alternatives, one recognized and the other not, has a larger value on a quantitative criterion, it simply searches for recognition and stops information search once an alternative is judged as recognized
- Fluency heuristic: relying on the time it takes to retrieve alternatives, that is, a person's retrieval fluency, to infer which of two alternatives has a higher value on a given quantitative criterion
- Take-the-best heuristic: considers cues sequentially (one at a time) in the order of their validity, it bases an inference on the first cue that discriminated between alternatives, that is, on the first cue for which one alternative has a positive value and the other a negative one

Validity of a cue: the probability that an alternative A has a higher value on a criterion than another alternative B, given that alternative A has a positive value on that cue and alternative B a non-positive value.

In the world of mass communication, where decisions-makers are confronted with an endless stream of texts, pictures and sounds, the art of making good choices depends on ignoring information rather than integrating all that is available.

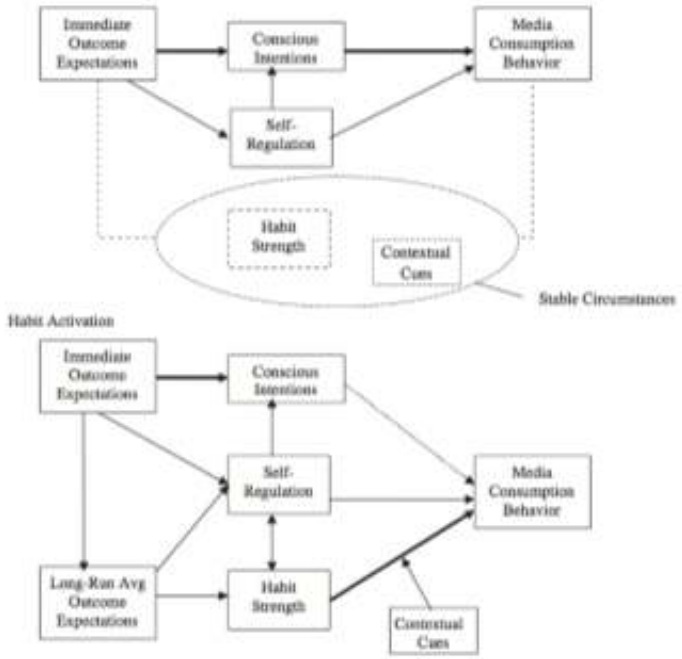
LaRose (2010) – The problem of media habits

Media habit: a form of automaticity in media consumption that develops as people repeat media consumption behaviour in stable circumstances.

The neurological role of habit is to protect individuals from being overwhelmed when processing information about routine activities.

Automaticity (in neurological terms): the ability to perform tasks without executive control originating in the prefrontal cortex.

In the habit acquisition phase, it is assumed that habits form through the association of specific media consumption behaviours and their immediate expected outcomes in stable circumstances, defined by both internal and external cues. Behaviour is determined by consciously formed intentions to obtain desired outcomes and avoid undesirable ones at that stage. But humans aren't blindly driven by forethought and planning. Expected outcomes are considered in the self-regulation process, which in turn affects intentions (through self-reactive influences such as self-administered awards) and media consumption behaviour.



Internal cues: moods, goals, related thoughts

External cues: time, location, presence of interaction partners, preceding events)

In the habit activation stage, media habits codetermine media consumption behaviour along with controlled thought and in some cases may determine behaviour to the exclusion of conscious influence. However, a stable situation may no longer be needed, as individuals through continuing conceptual restructuring form new associations with their media consumption behaviours.

The cognitive structure of a habit and the cues that trigger it might change. This is indicated by the transition from dotted lines in the acquisition phase to solid lines in the activation stage.

Established habits are maintained by long-run average outcome expectations that only slowly respond to changes in short-term expectations.

The estimate that 54 percent of all media behaviours are habitual is possibly an underestimate.

SESSION 5 – MEDIA ADDICTION: CAN OBSESSIVE USE OF MEDIA TURN INTO ADDICTION?

Most concerns relate to videogames – some scholars state that:

- Online gaming has strong associations with compulsive internet use (Van Rooij et al, 2010)
- Structural characteristics similar to slot machines that play a role in pathological gambling
- In particular, MMORPG's are especially suspected to be addictive

➔ Beneficial to game industry?

About videogames (Haagsma et al, 2012)

- Popular activity among whole population
- Casual games and small games on social network sites (SNSs) most popular
- Online games are less popular, however, more time is spent on these games
- Just a small group reports having problems with controlling their game behaviour

Sociability

- Capacity for socializing is believed to play a significant role in the addictive nature of various internet apps
- Introduction of social aspects in videogames associated with increased reports of video game addiction
- Important to distinguish between medium of internet and its specific apps

Gaming addiction?

- Psychopathological disorder (DSM-V): comparable to alcohol or drugs?
- Substance addiction vs behavioural addiction
- Addiction as metaphor (''I'm addicted to chocolate) vs literal addiction
- Gaming addiction vs excessive gaming: compulsive or enthusiastic obsession (still potentially problematic?)

Behavioural addiction

- DSM-V: dependence (bv substance use)
- ''Behavioural addiction'' (bv pathological gambling): model for concept of internet addiction
- However, differences between gambling and internet are easily neglected or overlooked
- Behavioural addiction itself is a problematic construct
- ''Impairment in behavioural control, craving and diminished recognition of significant problems with one's behaviour and interpersonal relationships''
- Criteria for behavioural addiction (Starcevic, 2013): salience, loss of control, tolerance, withdrawal and negative consequences

What is game/gaming addiction?

- Game addiction or gaming addiction?
- ''Loss of self-control over game behaviour, which leads to significant damage.'' (van Rooij, 2011)
- ''Persistent and excessive involvement with videogames which cannot be controlled, despite associated social and/or emotional problems.'' (Lemmens et al, 2009)
- No consensus on definition, criteria and measurement
- No official diagnosis in DSM-V
  - Gambling disorder is recognized
  - Internet gambling disorder mentioned in appendix, as needing further study
- Concept is still not well-defined or validly measured

Pathological gambling criteria: cognitive preoccupation (salience), tolerance, mood regulation, relapse, withdrawal and conflicts (also: negative consequences and loss of control)

Measures (I)

- Game addiction scale for adolescent: based on the seven pathological gambling criteria, 21 items were created representing seven DSM-based criteria for gambling addiction to represent game addiction → reduced to 7 item-scale
- Compulsive internet use scale: in order to arrive at the items of the CIUS, the authors reviewed the DSM-IV criteria for substance dependence and pathological gambling as well as Griffiths' criteria for behavioural addictions

Problems with gambling approach

- Variation between criteria and cut-off points
- Polythetic (having some criteria) vs monothetic (must meet all criteria)
- Some criteria refer to engagement rather than (psychopathological) addiction (thinking about gaming, playing longer than intended, playing games to relax)
- Lack of temporal dimensions
- Neglect of differences and consequences

Towards a consensus of definition of pathological video-gaming: A systematic review of psychometric assessment tools (King et al, 2013)

- 63 quantitative studies, 18 instruments
- Available measures may be broadly characterized as inconsistent
- 3 key symptoms: withdrawal, conflicts and loss of control

A mete-analysis of pathological gaming prevalence and comorbidity (Ferguson et al, 2011)

- Two basic approaches
  1. Application of ''pathological gambling'' model
  2. Focus on interfering nature of gaming behaviour
- Some studies use time length of exposure to videogames
- Categorical or continuum approach

Table 1
A comparison of engagement, pathological gambling analogy and interference approaches.

Engagement	Interference	Problematic gambling analogy
Cognitive Salience		Cognitive Salience
Tolerance		Tolerance
Euphoria		Euphoria
	Conflict	Conflict
	Withdrawal	Withdrawal
	Relapse	Relapse
	Reinstatement	Reinstatement
	Behavioral Salience	Behavioral Salience

Note: Uses factors identified by Charlton and Dansforth (2007) to illustrate how the problematic gambling analogy approach may overidentify cases by combining items reflecting true interference with those representing non-problematic engagement.

- Prevalence estimates and comorbidity with other problems varied widely between studies
- Measurement which replicate ''pathological gambling'' approaches have higher prevalence estimates and lower comorbidity estimates
- Interference approach has higher correlations with negative outcomes

Debate among scholars (I) – Problems with the concept of video game ''addiction'' (Wood, 2008)

- Current criteria are both inappropriate and misleading
- Excessive play = ineffective time management skills, or symptomatic response to other underlying problems that they are escaping from
- Consequences do not compare well with other addictions
- Solves spontaneously

Debate among scholars (II) – Comment on wood (Turner, 2008)

- Many arguments against ''video game addiction'' could also be applied to alcohol and gambling (moral panic; small prevalence)
- Consequences have little to do with definition of addiction
- Many gamblers/drug users also suffer from underlying problems
- Also similarities with gambling; trapped in a cycle

Gaming addiction research – Prevalence

- Small percentage seems to be experiencing problems related to game behaviour
  - 1.3% among Dutch adolescents and adults (Haagsma et al, 2012)
  - 1.5% among Dutch adolescents (Van Rooij et al, 2011)
- Persistent over time
  - Half of 'addicted' adolescents were still addicted 1 year later (Van Rooij et al, 2011)
  - Most (84%) of the youths who were 'pathological' gamers at tie 1 were still 'pathological' games 2 years later (Gentile et al, 2011)

Gaming addiction research – Who is 'addicted'?

- Adolescent boys spend more time on gaming + score higher on gaming addiction (Griffiths et al, 2004)
- In particular, users of online games (Peter & Malesky, 2008)
- Gamers that are psychologically and socially vulnerable (Gentile et al, 2011; Lemmens et al, 2011)

Internet gaming addiction: A systematic review of empirical research (Kuss & Griffiths, 2011)

ETIOLOGY / RISK	⟺	PATHOLOGY / ADDICTION	⟺	RAMIFICATIONS / CONSEQUENCES
Personality traits	Pathophysiology	Classification/ assessment		Negative consequences
Motivations for playing	Comorbidity	Epidemiology		Treatment
Structural game characteristics		Phenomenology		

Risk factors

1. Personality: introversion, neuroticism, impulsivity
2. Motivation: coping with negative emotions, socialization, personal satisfaction
3. Game characteristics: reward, social aspect, no clear ending

Between risk factors and development of pathological internet use

- Pathophysiology: online gaming addiction associated with a wide variety of physiological, biological and neurological factors

- Comorbidity: anxiety disorder, panic disorder, depression, social phobia

Pathology/addiction

1. Classification/assessment: distinguish addiction from engagement
2. Epidemiology: large variability in prevalence percentages;
   > 0.3% - 12%
   > Gamer samples 8% - 50%
3. Phenomenology: experiences similarly to any other substance related addiction (low, time loss, immersion)

Ramifications

1. Negative consequences: psychological and psychosomatic problems
2. Treatment: symptoms similar to substance addiction (efficacy of psychopharmalogical treatment? biological underpinnings?)

Kuss & Griffiths (2011)

- Internet gaming addiction is a serious health problem, given its relation to other problems and the wide variety of negative consequences
- Some similarity to substance-related, and other behavioural addictions
- Distinguish excessive engagement and addiction
- MMPORPG players particularly experienced symptoms of addiction

Does gaming addiction exist?

- No: excessive play ≠ addiction (Griffiths, 2008; Griffiths & Meredith, 2009)
  → gaming not the problem, but a symptom (Wood, 2008)
- Yes: similar brain patterns (Kuss & Griffiths, 2011)
  → gaming = gambling (bv pathological gambling in DSM-V)

Spekman et al (2013)

- Three addiction subscales of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2)
  - MacAndrew-Revised (MAC-R) – risk via distress
  - Addiction Potential Scale (APS) – antisocial/impulsive personality
  - Addiction Admission Scale (AAS) – willingness to admit
- Excessive gaming scales (Griffiths, 2008): psychological + physical symptons
- 1004 Dutch adolescent boys (age: 11-18, M=14.18, SD=1.36)
- Results: significant relations between psychological symptoms of excessive gaming and traits indicating pathological disorder
  - MAC-R, AAS, APS, respectively
  - r = .12, $p < 0.01$; r = .17, $p < 0.01$; r = .65, $p < 0.001$
  - Physical symptom disorders also significantly related to all three subscales
  - MAC-R, APS and AAS:
  - r = .27; r = .29; r = .27 (all ps < .001)
  - ''Addicts'' significantly higher on all three subscales than ''non-addicts'' (F-tests, ps < .001)

Facebook addiction

- Bergen Facebook Addiction Scale

- Griffiths, Kuss & Demetrovics (2014): social networking addiction is also characterized by; salience, mood modification, tolerance, withdrawal symptoms, conflict, relapse

Model of media attendance (LaRose & Eastin, 2004)

- In most studies, a definition that is derived from the criteria for pathological gambling found in the DSM-IV is applied
- Continuum of unregulated media behaviour that lies between normal and problematic use
- Expected outcomes, self-efficacy, experience, habit strength and deficient self-regulation (DSR) are important determinants of media use

LaRose & Eastin (2004)

- Outcome expectancies important, in particular among newer internet users
- More experience = more habitual modes of internet consumption
- Once habits are established, individuals still monitor their internet use, however some of them lose self-control, leading to dependency

Addiction, habit or deficient self-regulation? (LaRose et al, 2003)

- Media addiction = deficient self-regulation
- Patterns of ''media addiction'' lie at one extreme of a continuum of unregulated media behaviour
- Unregulated media behaviours are experienced in all media consumers

How to prevent/treat gaming/internet addiction?

- Make media less addictive?
- Build in mandatory breaks?
- Warning against addiction within games/sites?
- Parental control/supervision?
- Intervention?

Summary

- No clear consensus about definition and criteria → prevalence?
- Most researchers agree that some individuals experience problematic gaming behaviour
- Yet, disagree on measurement and criteria for labelling 'addiction'
- Must distinguish excessive gaming from addictive gaming
- Addiction measurement highly problematic
- Psychopathological disorder, psychopathological personality
- Comorbidity
- Similar problems with ''internet addiction'' (online activities)
- Continuum perspective vs all-or-nothing phenomenon

Ferguson et al (2011) – A meta-analysis of pathological gaming prevalence and comorbidity with mental health, academic and social problems

Mental health professionals, policy makers and the general public continue to debate the issue of pathological video gaming. Scholars disagree on the prevalence and diagnostic criteria for this potential new disorder. Ferguson, Coulson, and Barnett did a meta-analysis considering existing scholarship to examine how different measurement methods influence prevalence rates and associates with other mental health problems.

One issue for pathological gaming is that despite widespread agreement among most scholars that the potential for pathological gaming in some players does indeed exist, there are no agreed upon set of diagnostic criteria. Ferguson, Coulson, and Barnett note two basic approaches in their review of literature:

- Pathological gambling model: DSM symptoms for pathological gambling are simply reworded to reflect pathological gaming; the assumption is that compulsive behaviours symptomatic of pathological gambling can be easily reapplied to other classes of behavioural addictions
  - Although this approach certainly has its supporters, it also has detractors who express concerns about whether the symptoms of pathological gambling may be misapplied to pathological gaming, over identifying non-pathological behaviour in gamers
  - This is particularly true when individual symptoms do not explicitly examine the interfering nature of the symptoms: without understanding the specificity and sensitivity of cut-off points (e.g. 5 out of 10 symptoms or 5 of 8 symptoms indicating pathological gaming) and with the potential for numerous questions to tap into normative rather than pathological behavior, the risk of over identification and inflated prevalence estimates remains high
- Interfering nature of gaming behaviour: this approach has an intuitive appeal at getting closer to potential intrusive and interfering symptoms than does the pathological gambling analogy approach (which focuses on strict parallel with established symptoms of pathological gambling)
  - However it might reasonably be argued that in divorcing itself from an established diagnostic framework, this type of instrument may lack consistency
  - Also, some studies examine pathological gaming simply from the perspective of mere exposure or time length of exposure to video games, time only approaches may not be adequate for assessing the interfering nature of the activity

Risk factors for the development of pathological gaming included personality styles marked by neuroticism, social isolation, and diminished self-control, as well as mental health problems related to depression, anxiety and ADHD.

One key issue often overlooked regarding the issue of pathological gaming behaviour is differentiating gaming behaviour which is pathological and potentially interferes with everyday real-world activities such as schoolwork or occupation, from gaming behaviour that is not. Some items may reflect positive engagement with video games rather than anything pathological. Briefly, the concept of engagement posits that a high degree of video game use can be a positive and non-interfering experience for many users.

Unfortunately, at present, scholars and practitioners have little guidance in regards to the most valid measurement approach for pathological gaming. The meta-analysis of Ferguson, Coulson, and Barnett seeks to address some of the existing questions and controversies in the pathological gaming research field. Specifically the following issues will be examined:

- How are prevalence estimates of pathological gaming influenced by measurement method used?
- Do online survey methods used in some studies influence prevalence estimates?
- Are prevalence differences observed between adults/children or between individuals in East/West?
- Do measurement methods influence observed relationships between pathological gaming and mental health sequelae?

Prevalence estimates and comorbidity with other problems varied widely between studies. Measurement which attempted to replicate pathological gambling approaches produced higher prevalence estimates and lower comorbidity estimates than methods which focused on the interfering nature of pathological gaming. The most precise measures produce an overall prevalence rate of 3.1%.

Diagnostic analogies with pathological gambling may thus produce spuriously high prevalence estimates, potentially over identifying non-pathological players as pathological. Diagnostic approaches focused on the interfering nature on other life needs and responsibilities may have greater validity and utility.

It remains unknown whether problematic gaming is truly a unique phenomenon or rather simply the symptoms of underlying mental health problems as some have concluded.

Spekman et al (2013) – Gaming addiction, definition and measurement: a large-scale empirical study
Although the general public appears to have embraced the term video game addiction, the scientific debate as to whether gaming addiction can actually be considered an addiction similar to substance addictions of DSM-IV is still unsettled. To date, research on gaming addiction has focused on problematic behaviour from the gaming activity itself and there has been little empirical research related to pathological personality patterns that usually are associated with substance addictions.

Therefore Spekman examined how game exposure and problematic gaming behaviour are related to personality patterns associated with addiction by means of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2).

Results showed that problematic gaming and physical symptoms were positively related to all MMPI-2 subscales, while game exposure was not related to the indirect measures of addictive personality patterns. Thus, problematic gaming should be clearly distinguished from high game exposure. High game exposure merely indicated enthusiasm for some although it may be psychopathological for others.

Furthermore, the relatively weak relationship between game exposure and physical symptoms, and the somewhat stronger relationship between these symptoms and problematic behaviour from gaming, appear to suggest that physical complaints are not necessarily related to playing for many hours on end. Rather, the physical game-related symptoms appear to be related to the psychological issues these boys experience from their problematic gaming behaviour.

Research shows that adolescent boys spend increasing amounts of time playing video games. Video games appear to be especially attractive to boys although this may be because most video games are designed by males for other males. Studies have shown that gaming may positively affect physical wellbeing as well as social aspects of life. Reviews of video game playing have also reported detrimental effects for players who appear to play excessively.

Playing games a lot may not be problematic for all gamers, whereas addiction is always detrimental for the player involved. Healthy excessive enthusiasms add to life, whereas addictions take away from it.

Griffiths argues that there are 6 psychological components to any addiction, which when applied to gaming are:

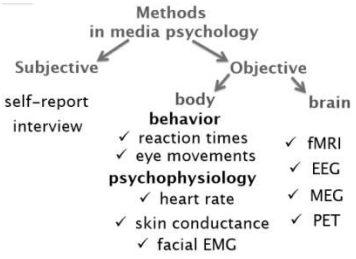
- Salience: gaming dominates thoughts, feelings and behaviour
- Mood modification: gaming is used as a coping strategy, to change mood
- Tolerance: needing to play games longer to achieve similar levels of mood modification
- Withdrawal symptoms: feeling psychologically or physically unpleasant when unable to play
- Conflict: inter- and/or intrapersonal conflict caused by the gaming behaviour
- Relapse: falling back to old game play patterns after a period of abstinence

Some of the criteria proposed by Griffiths are more peripheral, while others are core criteria in determining gaming addiction. The core criteria consist of conflict, relapse, (behavioural) salience, and withdrawal, while the peripheral criteria consist of (cognitive) salience, mood modification, and tolerance. Using this approach, Charlton and Danforth found that many gamers did meet the peripheral criteria, but not the core criteria. Among the gamers who met the core criteria, a large majority (84.6%) also met the peripheral criteria. They concluded that these core criteria can be used to distinguish the highly engaged gamers from the addicted gamers.

The fact that Spekman found no relationship between game exposure and the indirect measures of addictive personality supports the reasoning of Griffiths that playing a lot does not always equate to pathological and/or addictive gaming. Thus, even though they're related, high game exposure and pathological gaming are clearly distinct concepts, and addictive gaming behaviour can thus not be simply defined by high game exposure.

SESSION 6 – MEDIA, MIND AND BRAIN

Increase in biologically focused communication articles from 2006 (Boren & Veksler, 2011)
→ Why and how can knowledge about body and brain help us understand media effects on our mind?



Why investigating body and brain responses enable objective measurements as compared to self-reports and interviews → body and brain measurements are more implicit than self-reports and interview methods (explicit)

Measuring body responses – Behaviour

1. Reaction times (RTs): Stop Signal Task measures inhibition of reaction in ms
   - Instruction:
   > Go trial; press button as fast as you can
   > Stop trial; after hearing the stop signal do not react!
   - Example of a study procedure with RTs: effects of violent gaming inhibition (30 min violent vs non-violent gaming, after that Stop-Signal Task)
2. Eye movements: Eye-tracker
   - Measures fixation points: points where eyes stop to focus
   - Measures saccades: eye movements between fixation points
   - Measures the process of attention
   - Application in media: website's design & content
   - Advantages: time resolution (fast – ms), non-invasive (measure reactions in natural settings) and implicit (no awareness of automatic reactions)
   - Disadvantages: can't answer the question; why you're not paying attention to an object you're supposed to?

Measuring body responses – Psychophysiology

1. Heart rate
2. Skin conductance
3. Facial EMG

What is psychophysiology: understanding the body's physiological systems

1. Cardiovascular
2. Skeletomotor
3. Nervous system

Assumptions of psychophysiology

1. The embodied mind
   - Human brain is not the only resource responsible for our behaviour
   - The way we behave is a result of the real-time interaction (nervous system – body)
2. The reactions of the brain and body can be measured overtime
3. Interactivity: stimulus – response

Interactivity: which is 1st; stimulus vs response?

- 300 ms = awareness threshold (Block, 2007)
- Some responses to media are really fast (17 to 75 ms!)
- 250 ms before the content could be consciously perceived or identified

Psychophysiology: how does it work? – Short term processes – Orienting Response (OR)

- Is it new? Is it important? Is it pleasant or not?
- Novelty and (emotional) significance of a stimulus
- Repeated stimulus presentation → habituation → decrease of OR
  (-) heart rate
  (+) skin conductance
  (+) skin temperature
  (+) blood vessel in the brain
  (-) blood vessels in the periphery (hands, feet)

Long term response: changes in heart rate (HR):
(-) Parasympathetic nervous system → ''rest-and-digest'' response → lower HR
(+) Sympathetic nervous system → ''fight-or-flight'' response → increase in HR

Changes in the sympathetic nervous system

- Heartrate (HR) – electrocardiogram: ECK
- Skin conductance (SC) – galvanic skin response (GSR); electro-dermal activity (EDA)
  - Pros: time resolution (electrical changes) and sensitive to emotional arousal
  - Contras: electrodes (less comfortable for participant), can't answer the question; which emotion elicited the reaction

➔ Both sensitive to emotional arousal

Facial Electromyography (EMG) – Measured muscles:

- Zygomaticus major (check): positive emotions
- Orbicularis oculi: enjoyment and smile, sudden defensive response
- Corrugator supercilii (brow): negative emotions, (anger, disgust)

Facial EMG – Facial Action Coding System (FACS)

- Based on Ekman & Friesen (1978)
- Coding of facial muscles associated with emotion
- Full and micro expressions
- Advantages: good time resolution (changes in real time) and can relate to a specific emotion
- Disadvantages: electrodes (less comfortable for participant) and can't show level of emotional arousal

Methods of neuroimaging for media studies

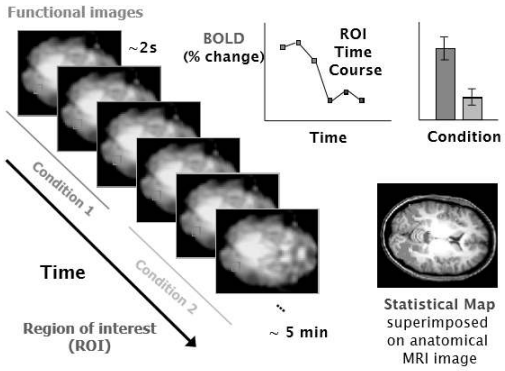
- Imaging physiological changes:
  - fMRI – Functional Magnetic Resonance Imaging
  - PET – Positon Emission Tomography
- Measuring electrical changes:
  - MEG – MagnetoEncephaloGraphy
  - EEG – ElectroEncephaloGraphy

fMRI scan: an image of functionally meaningful brain activity during performing a task in a MRI scanner

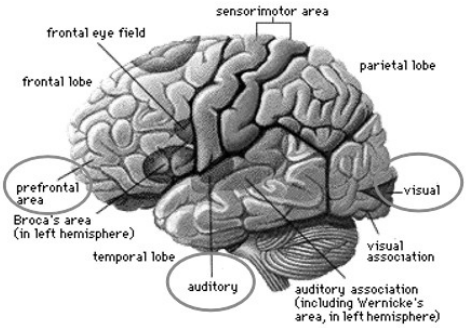
- Advantages: non-invasive (not harmful for participant) and good combination of spatial and temporal resolution
- Spatial resolution: voxels
- Temporal resolution: few seconds (5-6s)

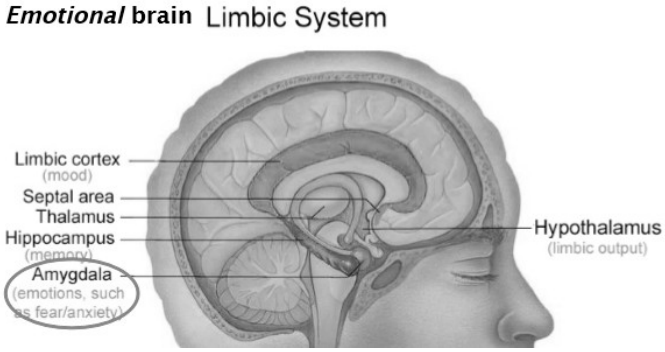
What does fMRI measure?

- Changes in Blood-Oxygenation – Level Dependent (BOLD)
- Increase in oxygen level: oxygenated vs deoxygenated haemoglobin → changes in magnetic field
- Activation statistics



Brain areas important for media studies





General questions for media neuroscience

- Localization: where does neural response to media happen?
- Selectivity: when does neural response to media happen? During/after exposure to media?
- Generalizability: when is neural response to media like other types of responses we expect to see?

Example: localization/selectivity; after media exposure

- Short-term effects of media violence on adolescents (Hummer et al, 2010)
  - 45 adolescents

  - Exposure: violent vs nonviolent game (30min)
  - Immediately after gaming → MRI scanner
  - Go/no-go task while their brain activation was recorded with fMRI
- Results and conclusions
  - Effect of violent video gameplay on brain activity
  - Players of violent game showed lower activity in dorsolateral PFC during inhibition task
  - Playing a violent videogame can influence brain activity during cognitive inhibition task just after playing a violent game
- Muray et al (2006): children's brain activations while viewing TV violence revealed by fMRI → different brain regions activated by viewing violent (Rocky) vs non-violent (PBS) media content

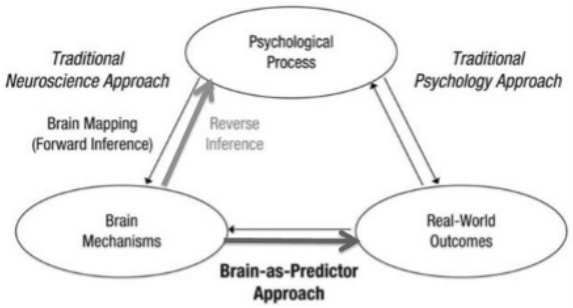
Intersubject correlation (ICS) (Hasson et al, 2008)

- Watching a movie in a cinema… A lot of stimuli: auditory and visual
- How is this consistent? How is this predictive?
- ISC can help us see general responses across time to media content
- Works in ''network'' model of brain

Be careful with generalizability…

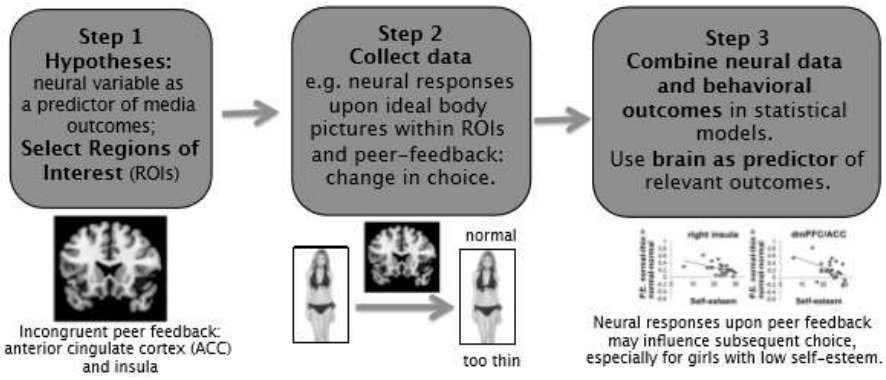
- Brain are ''a'' active in specific task ''p''
- Brain area ''a'' is associated with cognitive task ''p''
- When are ''a'' is active, task ''p'' happens
- BUT: could it be related to other task?
- Reverse inference problem
  - Are ''a'' may be associated with many different tasks (not only with the ''p'' task)
  - Need for selectivity studies (area ''a'' associated with task ''p'' but not with task ''q'')
  - ''Brain as predictor'' approach (Falk et al, 2016)

Brain-as-predictor approach (Falk et al, 2016)



Brain-as-predictor hypothesis: neural processes as independent variables that directly predict outcomes beyond the neuroimaging lab

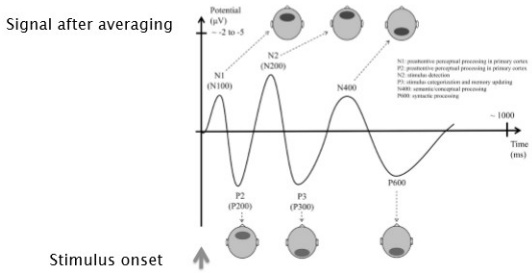
How to apply brain-as-predictor approach to media psychology? Brain activation upon ideal-body media exposure and peer feedback in late adolescent girls (van der Meulen et al, 2017):



EEG – Electroencephalography

- Measures the electrical activity of neurons
- Advantages: non-invasive, cheap and good temporal resolution
- Disadvantage: worse spatial resolution

How does it work? – ERP = Event Related Potential



How to apply it to media psychology?

- Early visual processing
- Attention
- Emotional regulation
- Media violence

Summary: fMRI vs EEG

	fMRI	EEG
Dependent measure	BOLD signal	Electrical activity of neurons
Cost	Expensive (-)	Cheap (+)
Invasiveness	Non-invasive (+)	Non-invasive (+)
Spatial resolution	Excellent (+)	Poor (-)
Temporal resolution	OK (s)	Excellent (ms)

Falk et al (2015) – Neural prediction of communication relevant outcomes

This brain-as-predictor approach encompasses studies that treat measures of brain activity in response to message exposure or other communication relevant tasks as: (1) mediators between communication relevant stimuli and outcomes, (2) moderators of the relationship between communication relevant stimuli and outcomes, or (3) direct predictors of communication relevant outcomes.

Neuroimaging methodologies (bv fMRI, EEG/ERPs, fNIRS) allow researchers to examine responses to relevant stimuli (bv messages, cognitive tasks) in real time during stimulus exposure or task execution. Furthermore, neuroimaging technologies collect data without the need for conscious introspection (as would be required of self-report instruments).

Neural data can also be treated as a mediator of the relationship between a communication manipulation and behavioural outcomes at the level of individual behaviour and population level responses to campaigns. For example, although they did not formally test mediation, Chua and colleagues (2011) hypothesized that tailoring health messages to specific individuals might increase the extent to which messages were processed as self-relevant, which in turn might predict message-consistent behaviour change.

In addition to specifying neural variables as moderators of the effects of communication variables or mediators of the effects of communication variables on behavioural outcomes, neural activity can also be conceptualized as direct predictor of communication behaviours. In these cases, neural activity is often operationalized in terms of individual differences that affect communication outcomes.

Step two – data collection: once hypotheses have been specified, the second step in the brain-as-predictor approach is data collection. In this step, relevant neural data (bv functional activity during a task, structure of specific brain regions) are collected within the laboratory and subsequent psychological, physiological, and/or behavioural data are collected, often longitudinally.

Step three – using neural data as direct predictors, mediators or moderators: in the third step of the brain-as-predictor approach, neural, physiological, or behavioural data are combined in statistical models that specify the brain as a direct predictor, mediator or moderator of relevant outcomes.

The examples above illustrate a range of ways in which neural data can complement and extend what is learned from explicit self-reports (bv of reactions to health messages, of recall following exposure to political communications). More generally, the brain-as-predictor approach builds on a foundation of behavioural research that has relied not only on self-report surveys and experimental outcomes but also implicit measures to understand a wide range of communication processes.

Though implicit measures are well-suited to assess concept accessibility and evaluations (Hefner et al, 2011) they do not reveal the underlying mechanisms through which concepts and evaluations are formed and change. By contrast, neural measures can record both explicit and implicit processes throughout the brain as they unfold. Thus, although neuroimaging methods can be more costly to administer in comparison to other measures (bv reaction time measures, surveys), neural data can also provide complementary information that would be difficult to obtain otherwise.

Hummer et al (2010) – Short-term violent video game play by adolescents alters prefrontal activity during cognitive inhibition

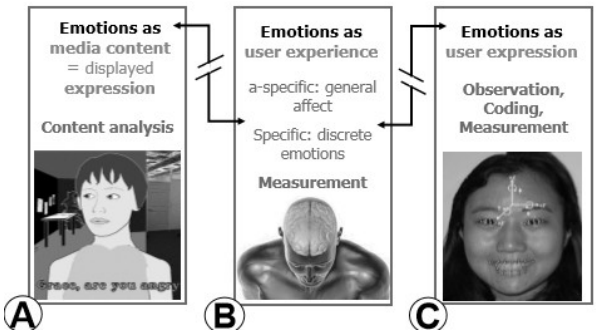
The inhibition of responses to ‘‘no-go’’ stimuli provides a measure of the ability to inhibit inappropriate and unwanted responses. This capability is likely mediated via lateral prefrontal cortex, which is active during response inhibition. Suppressed frontal activity is associated with aggressive and impulsive behaviour (Barkley, 1997; Raine et al, 1997; Siever et al, 1999). Disruptions in an emotion regulatory circuit consisting of the prefrontal cortex and limbic regions likely play a role in aggressive behaviour tendencies.

Little experimental research has examined potential lingering effects of media violence exposure on brain functioning after the exposure has ended (Wang et al,2009). This question is important because research showing persistent effects of media violence exposure on aggressive thoughts, feelings, and behaviours would be consistent with GAM (Anderson & Bushman, 2001). Recently, Wang et al (2009) addressed the issue, demonstrating that playing a violent game can alter subsequent prefrontal activity during an executive performance task.

Participants who played a violent, first-person shooting game, however, showed no such no-go activity in right DLPFC. A contrast of the two groups emphasizes this difference, with right DLPFC demonstrating a relatively higher BOLD response to no-go trials in the NVG players. In other words, playing a violent video game for only 30 minutes immediately produced lower activity levels (compared to a nonviolent video game) in prefrontal regions thought to be involved in cognitive inhibition.

SESSION 7 – EMOTIONS AND MEDIA

Locate emotion in media exposure



Predisposed to signal emotions

- Emotions in media often strong and simple: prototypical and easy to recognize
- Communication of emotions often via physiology and facial expressions (non-verbal/verbalized)

Emotional expressions universal (Ekman): variations on eyes (3), eyebrows (3) and mouth (3)

- Simplified indicators
- Smileys (just two dots)
- Brain is predisposed
- Amygdala
- Facial sensitivity, especially the eyes

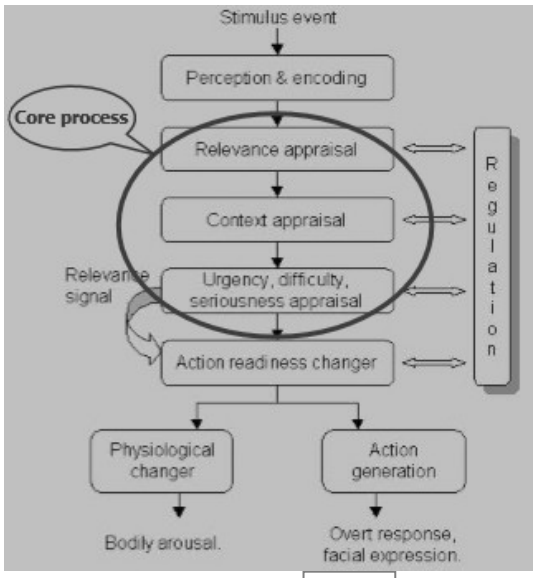
Why are emotions omnipresent in media?

- Attract attention, raise curiosity
- Connect to basic needs
- Media are designed to influence emotions
- Not affected emotionally by a movie, clip or videogame? → ''boring!''
- 'Appealing heroes' raise emotions: emotional/moral conflict
- 'Emotions sell' (do they?)

Emotion Theory (Nico Frijda, 1986): emotions are <u>functional</u>; they tell us what is relevant and what is not.

What is 'emotion'?

- Older perspectives
  - Cognition vs emotion
  - Physiological (side) arousal (W. James, 1880)
- Today: appraisal theories (Lazarus, Frijda, Scherer)
  - Personal concerns (situational appraisals)
  - Action tendencies
  - Control precedence



Appraisal theory of emotion →

Measuring emotions – Emotions: three different manifestations ('output' modes);

1. Behaviour: bv verbal, non-verbal, facial expression, posture
2. Physiology: bv heart rate, skin conductance, blood pressure (EEG, fMRI, PET scans (neuroscience))
3. Inner feeling state: introspection (self-report (''I feel…'))

Affect, mood and emotion

- *Emotion* = a (sub)conscious evaluative response to some event, a powerful and clearly unified feeling state, such as anger or joy, guilt or shame
- *Mood* = a feeling state that is not clearly linked to some event
- *Affect* = a quick (automatic) response that something is good or bad, liked or disliked

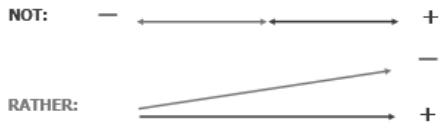
Why would we like negative emotions (sad movies, bad characters, disgusting scenery, horrific events, etc) in media? Does it have a function?

Emotion-based gratifications

- YES: Eudaimonic Perspective; in search for deeper meaning
- In response to: Prevailing Hedonistic perspectives
  - Mostly based on Mood Management (Identification and Affect Disposition Theory)

Parallel processing of emotions (Konijn, 2013)

- ''How do we appreciate media that exposes us to negative emotions?''
- Positive and negative emotions in parallel
- Not bipolar opposing poles of one continuum, but rather orthogonal, unipolar;
- A trade-off between involvement (bv empathy) and distance (bv abhor):



Media use for coping purposes (vs escapism)

- Coping with negative emotions, to relieve stress (Lazarus, 1991)
- Emotion regulation (Gross, 2006)
- Media-based coping (Nabi, 2010): media as resource for coping and comfort

Media-based emotional coping (Nabi et al, 2010)

- Examining the emotional benefits and pitfalls of media consumption
- Media messages serve not simply as stimuli for arousing or regulating emotion (as in MMT)
- Emotions likely play a more complex role in audiences' emotional development and social relationships
- Conceptualization of emotion-focused coping and regulation extended to media-based emotional coping
- Also includes positive emotions and effect
- Emotional depictions in the media 4 potential functions:
  1. Socialization of emotional responses
  2. Cope with negative emotions
  3. Benefits of more positive mental states
  4. Formation of more cohesive social relationships

1 – Media and the learning of emotional responses
Socialization of emotional responses: learn appropriate emotional responses based on the emotional responses viewers observe in media characters: ''What gives significance to vicarious influence is that observers can acquire lasting attitudes, emotional reactions an behavioural proclivities toward persons, places or things that have been associated with modelled emotional experiences. They learn to fear the things that frightened models, to dislike what repulsed them and to like what gratified them.'' (Bandura, 2001)

2 – Coping with negative emotional experiences

- Media may help to cope with negative emotions (daily-life circumstances)
- In response to MMT: paradoxes of media selection (bv sad movies, bad guys), mood optimization, gender differences, bv coping with regret
- Media preference driven by coping needs? Cognitive re-appraisal?

3 – The benefits of media enjoyment

- Media enjoyment: positive affect, feels good → benefits wellbeing
- 'Broaden and build theory' (Frederickson: positive emotions broaden one's focus, while negative emotions narrow one's focus
- Media use to rebound from negative emotions more quickly? To build up a buffer? To 'broaden and build' resources (both psychologically and physically)?

4- Media consumption and the social sharing of emotion

- Social sharing as a result of exposure to emotionally-charged media – adaptive function (during/after)
- Emotionally charged events motivate to:
  - Verbalize our experiences, sense-making
  - Validate the self, self-image
  - Sharing with social group, collective knowledge

Emotions and media (Konijn, 2013)

- Why would we respond emotionally to media fare of which we know it is fabricated fiction, at best a manipulated representation of some reality, but not reality itself?
- Do we know? Does it matter? How?
- We process media content in parallel routes

Parallel processing of media messages (Konijn, 2013)

- Emotions and affect guide processing of media → why?
- Emotion theory: emotions have a signalling function (''If I feel, it must be real)
- Implications: emotions frame, colour, bias media-based information processing
  - Perceived realism
  - Morality

Emotions guide processing media messages

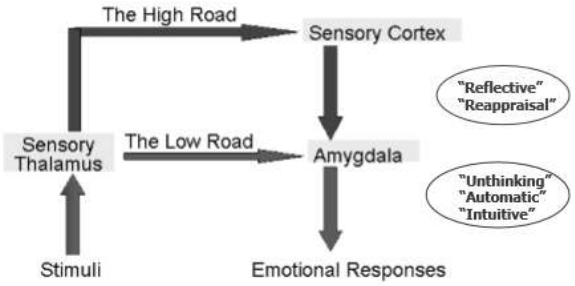
- Emotion theory: emotions have a signalling function
- The role of the amygdala
  - Sensitivity to rewards and threats
  - Lower pathway vs higher pathway
- Evolutionary bias (brain development/real event – imagined events –mediated events)

High and low path in the brain (LeDoux)

- Emotions: lower pathway → Amygdala
  - Almond shape set of neurons deep in the brain's medial temporal lobe
  - Evolutionary older
  - Part of the limbic system
- Cognitions: higher pathway
  - Higher pathway is slower
  - Frontal part of the brain
  - Sensory cortex
  - Cognitive reflection ('thinking response', re-appraisal)
  - Evolutionary newer

Parallel processing of emotional stimuli: high and low path in the brain (LeDoux)

- Lower pathway signals possible dangers, without immediately directing awareness toward the potential threat (alarmed but not necessarily distracted from the task at hand)
- Lower path often triggered by 'false positives'
  - Bv a stick that resembles a snake, triggering a fear reaction
  - Immediate recognition of facial expressions
- Higher path moderates initial response
- Lower pathway has difficulties to distinguish between fact and fiction (''If I feel, it must be real'')



Summary

- Many negative emotions in media fare: emotions as portrayed (content) vs emotions as felt (in user)
- Parallel processing of positive and negative emotions: a trade-off
- Emotions are functional – appraisal theory: emotions, affect, mood (measuring 'emotion' usually indirect)
- Eudaimonic motives vs hedonistic
- Media-based emotional coping extends previous theorizing
  - Socialization of emotional response
  - Media to cope and regulate our daily-life stressors
  - Positive experiences to rebound and build resources
  - Social sharing of media-based emotions
- Parallel processing of emotions guides processing media messages
  - Higher and lower pathway in the brain
  - Emotions take control precedence: ''If I feel it, it must be real''

Konijn (2013) – The role of emotion in media use and effects

Most recently, emotions have become a hot topic, and an increased emphasis can be found on emotions as a mechanism underlying media use and effects. Likewise, studies in emotions have become omnipresent in online and computer-based communication, most notably including virtual humans expressing and detecting emotions. Konijn discusses the newest trends in applying psychological emotion theories in modelling emotions in virtual humans.

Konijn described how early media psychological research has developed from emphasizing cognitions, attitudes, and recall from media exposure, to a steady increase in studying emotions, both in terms of emotional displays in media content and as an emotional state in users.

Media research that focuses on emotions now include not only entertainment and persuasion media, but also the role of emotions in processing the news, online communication, and virtual worlds.

The impact of emotional exemplars in the news and media generally seems significant because they are more accessible and influential than non-arousing exemplars, although their impact requires more detailed research in how emotional exemplars in the media may affect real-world knowledge structures. Special attention is needed in this respect for the influence of emotional portrayals in fiction and entertainment media, how they may eventually cultivate various beliefs, such as stereotypical ideas about unfamiliar issues, or in answering questions such as: how do emotional exemplars facilitate stimulus generation? After all, the extant literature suggests that we tent to respond the media images as we do to real images (at least at the lower path of processing), and media images are processed such that they may affect one's perceptions of social reality.

Media may fulfil a wider array of functions than has generally been considered from hedonistic perspectives. Media may not only fulfil a function in improving our bad moods, but counter-hedonic media selections may help us to adjust for a subsequent task, fulfil coping needs (bv overcoming guilt or regret), or eudemonic functions.

Emotions: the awareness of situational demands and personal concerns. Emotions signal what is relevant and point the human being at threats, dangers, and opportunities to serve one's well-being in general.

Additional specific research applying emotional psychological frameworks is needed to more fully and specifically understand which needs, goals, and concerns are served by using media, particularly emotion-evoking media. From an emotion psychological perspective in which emotions are seen as functional responses of the organism to a demanding environment, a relevant question is: what functions are served, under which circumstances and to what ends, in using media?

Further theorizing and research are needed into the parallel processing of processing positive and negative effects, or the occurrence of multileveled emotions. Contemporary emotion psychology acknowledges that positive and negative emotions are not bipolar, but rather occur in parallel.

Certainly, developing strong emotional bonds with fictional characters, and portrayed events and narratives is important in appreciating entertainment media. However, important progress can be made in reviewing the various concepts that have evolved (e.g. transportation, immersion, presence, para-social interaction), how constructs overlap, and how to delineate their differences as well as compare the various measurement devices in detail.

The results of the influence of emotions in relation to media content on memory are mixed and depend on differences in arousal level and the valence of emotions, whereas discrete emotions with a similar valence also sorted the differences in attention and recall. Effects of positive and negative emotions could be further studied in terms of (dis)congruency between users' emotional states and the emotional portrayals in media images. Undoubtedly, emotions play an important role and often seem contagious when mediated events are still remembered years later, in media messages that create hoaxes, social unrest, or moral panic, or in specific media fare that go viral (e.g. a YouTube clip). Thus, it is important to study in much greater detail than has been done thus far how, when, and under what circumstances specific media messages pull the heart strings in excessive ways.

Emotions and affect have been shown to influence information processing. Findings showed that different emotions differently influenced people's risk perceptions, policy preferences, and reality perceptions. Much more research is needed, however, in studying correspondence between specific emotional states and emotion-relevant media, especially how emotions serve emotion regulation and coping needs and direct information processing of media content.

Research results thus far suggest that the more emotional people are when processing media, the more likely it is that they will believe it. More work needs to be done here. Sophisticated research methodology such as used in neuroscience may be helpful in this respect. One of the important findings is that we have two pathways along which we process media content, a higher and a lower pathway. However, the lower, faster pathway is often triggered by false-positives because it scans the environment for possible threats and dangers and prepares the human system for possible (immediate) action. Therefore, it might be hard for our lower path to process ambiguously real or graphically real media and discern between the real and not-so-real, or fictitious.

When applying recent insights from positive psychology and the broaden and build effects of positive emotions, positive emotions as derived from media use may fulfil important functions of restoring energy and resources. Although not yet in media-related contexts, research showed that positive emotions broaden our attention to take in more of the world around us, whereas negative emotions narrow attention down to one specific problem.

The options for creating virtual characters empowered with emotional expressiveness as well as emotional responsiveness to users, including the ability of emotionally binding users, seem endless and very promising. Smart mixtures of traditional entertainment media tools and technological innovations allow the user in role-playing games to explore various perspectives of oneself in confronting a diversity of possible events. The interactive nature and vicariously experiencing possible actions enforce high levels of emotional involvement and provide rich learning experiences. In designing emotionally competent virtual humans, computer scientists, emotion psychologists, and media psychologists are needed to challenge each other in collaborative research endeavours.

Although the field of media psychology has devoted much research attention to the possible detrimental effects of questionable media content, the time is ripe to also focus on how media functions to serve human well-being. Media's potential to emotionally connect to users and create emotionally rich virtual worlds may serve important functions for both general life satisfaction and the relative balance of positive and negative effects in daily life.

Nabi et al (2010) – Media-based emotional coping: examining the emotional benefits and pitfalls of media consumption

Media messages serve not simply as stimuli for arousing or regulating emotion, but rather they possibly play a more complex role in an audience's emotional development and social relationships that previously acknowledged. Based on the available extant evidence, we argue that emotional depictions in the media have the potential to contribute to:

- The socialization of emotional responses: emotional learning and socialization
- The ability to cope with negative emotions: coping
- The likelihood of experiencing benefits of more positive mental states: generating positive experiences via media use
- The formation of more cohesive social relationships: media-generated social sharing of emotion

It should be evident that each of the above has implications for the social interactions that ensue. That is, the lessons we learn about emotional expression impact how we interact with those we meet. Our ability to cope has implications not simply for the amount of social interaction that we seek out or avoid but also for the quality of those interactions. The extent to which we enjoy our media experiences has implications for who we might share them with not simply after, but also during, exposure. Indeed, how much we enjoy (or not) those experiences themselves can be very much tied to who is present (or absent) during consumption. Further, the social sharing of emotional media messages may help bond individuals and social groups, or conversely, threaten those ties. As media scholars, we do ourselves a disservice to think of emotional responses to media as strictly intrapersonal phenomena.

Considering the context in which such reactions arise and the implications they have for social interaction will be an important step forward as we continue to develop our understanding of the emotional benefits and pitfalls of media-based coping experiences.

Despite these potential positive outcomes, there are potential pitfalls within each of these domains that are important to address.

In the review Nabi focuses on the ways in which the media might play a role in learning about, coping with, seeking out, and socially sharing emotions.

Emotion-focused coping: the process of managing or regulating the internal consequence of a stressor, which typically involves attempts to minimize or alleviate negative affect.

One of the more basic ways in which we imagine the media can contribute to viewers' emotional lives is as a source for learning adaptive or socially appropriate emotional responses to situations they might face in their life experiences. From a cognitive appraisal standpoint, the thoughts one has about the environment relative to one's goals underlie one's emotional response. Surely natural predispositions toward a certain style of thinking (e.g. optimism vs. pessimism) have influence. However, there is still plenty of room for media influence, including teaching about emotions, modelling appropriate emotional behaviour, and socializing audiences to appropriate norms of emotional expression.

Perhaps the most fundamental question we might ask regarding media effects and emotion is what role might the media play in teaching people about emotions and emotional processes. After all, to the extent we observe the precursors, onset, and consequences of emotional expression in the media, it makes sense that we would learn about the phenomenon of emotion itself. Yet, there is little evidence speaking to the issue of media's role in teaching people, children in particular, about emotions per se. Still, some evidence on this point does exist, suggesting that TV content may be effective in educating children about emotional processes. Educational programming like Sesame Street can teach children about emotions.

Additionally, technology now exists that can enable the development of virtual human beings that can be programmed to assist children and adults in learning to identify, express, understand, or manage emotions. Evidence suggests that children may transfer the emotional lessons they learn from such mediated experiences into real life.

Social cognitive theory: through observing others' behaviours – including those of media figures – one may develop rules to guide subsequent actions. Although moderated by observers' cognitive development and skills, observational (or social) learning is guided by four processes:

- Attention: to certain models and their behaviour based on source and contextual features
- Retention: of the observed behaviour and its consequences
- Production: of the observed behaviour in appropriate contexts
- Motivation: to selectively engage in observed behaviours based on positive or negative reinforcement from one's own behaviour, the observed feedback given to others, or internal incentives (self-standards)

As observational learning occurs via symbolic representations, the effects are potentially long lasting, and self-efficacy is believed to be central to behavioural performance. With social cognitive theory in mind, it is reasonable to imagine that audiences might learn appropriate emotional responses based on the emotional responses they observe in media characters. Despite the intriguing notion that media depictions may influence emotional reactions to objects and events in the real world via modelling processes, there is minimal research on this point. Perhaps the best-known line of research that touches on this subject actually focuses on the negative consequences of this process – that is, the modelling of aggressive behaviour.

Emotional socialization: the conveyance and adoption of norms of appropriate emotional experience and expression.

Cultivation theory: addresses the relationship between TV content and viewers' beliefs about social reality. Compared to light viewers, heavy viewers perceive their social environment as more similar to the world as portrayed on TV than it really is. Thus, if themes of programming within and across genres (or at least across the programming in a person's media diet) convey particular patterns of emotional expression for men and women, cultivation theory would predict that viewers would be likely to internalize these patterns as norms and be more likely to conform to them – and to hold others to them in their own life experiences.

Desensitization: repeated exposure to messages that typically evoke an emotionally based physiological response (bv those that contain violence) lose their capacity to do so). It is quite likely that desensitization based on media exposure might have potential emotional benefits in terms of coping.

Mood management theory: people use media to modulate their affective states. People, driven by hedonistic desires, strive to alter negative moods as well as maintain and prolong positive ones. Consequently, they will arrange their environments to adjust a wide variety of mood states, using any genre or specific type of communication available. Four message features might impact message selection based on mood: (1) excitatory potential, (2) absorption potential, (3) semantic affinity and (4) hedonic valence.

If a message reflects one (or presugmably more) features that might perpetuate the negative state the message is likely to be avoided in favour of one that would interrupt the negative state.

By recognizing that the media – whether news or entertainment, television or computer, audio or video – can aid in people's adjustments to life events, the research possibilities are greatly expanded in part because rather than simply looking at the emotional outcomes associated with media consumption, we are encouraged to look at the cognitive underpinnings of those emotional states that might be altered (or enhanced) through media consumption. As Nabi et al (2006) argue, if media content changes the cognitive appraisals that underlie an audience member's perceptions of life events, their emotions will follow suit. Recognizing these two different routes of influence – arousal level and cognitive appraisal – allows us to better understand the ways in which media consumption might aid in the coping process.

Exploring the intersection between media consumption and interpersonal communication is a critical, yet often overlooked, area of media and emotion research. Indeed, though the social sharing of information obtained through the media is at the foundation of one of the earlier models of media effects (two-step flow model of communication), this research focused on the information itself rather than the affective valence associated with it. Yet, there is a growing body of literature on the social sharing of emotions that indicates that people have an instinctive need to disclose to other people when they experience emotionally charged events. There are multiple explanations for this need:

- We need to verbalize our experiences to help make sense of them
- Emotional experiences – either positive or negative – can challenge our self-images, and thus we seek out others to help validate the self, that is, to confirm that we are still ourselves, despite this event
- By sharing emotional experiences with members of our social group, the group develops collective social knowledge on emotional experience which provides the person exposed to an emotion antecedent with: better anticipation, smoother cognitive processing, more appropriate responding and smoother cognitive integration afterwards

In other words, social sharing of emotions has an adaptive function, both for the individual and for the social group. Emotional broadcaster theory of emotional disclosure: intra physic need to share emotional experiences results in both emotion and information traveling across social networks.

SESSION 8 – REALISM VERSUS FICTION

Cultivation theory (Gerbner, 1967)

- Initially much more of a sociological level theory: role of TV in construction of social reality
- Gerbner argued that TV was the common denominator – common storyteller
- These were among the earliest ideas about media's impact on perception

Main ideas of cultivation

- Message system analysis and survey research
- How much do you watch and social reality questions
- Heavy viewers have perceptions of social reality that more closely match television's worldview than light viewers do

Findings of cultivation

- Heavy viewers are more likely than light viewers to hold the following views:
- There are fewer elderly and they are often sick and disabled
- There are more law enforcement people
- There is a greater likelihood of being a victim of violent crime
- People are less trustworthy

Media effects involved

- Frequency and prevalence of violence in society
- Effects on social perceptions of groups (prejudice, stereotypes)
- Effects of news on perceptions of issues (estimates of aggression in society)

Criticisms of cultivation research

- Mostly correlational
- Problems with direction of causality
- Early studies didn't control for third variables
- Content matters: general media exposure vs specific content
- Recent research attempts to explain the process in more psychological terms

How is it presented : media formats – genres

- Older conceptions of 'reality' suggested that reality merely existed, for us to accept
- News matters simply because it is real, and fiction has no consequences because everyone knows it's not real?
- In Gerbner's days, not so many media formats
- Genre indicator for 'reality status' → frames a media message

Media formats – genres – indicator for 'reality status' (Konijn & Hoorn, 2004)

Reality-Based Genre Taxonomy Based on Clustered Genre Preferences of Respondents

Reality Representation: Realistic Fiction–Unrealistic Fiction	*Product Type/ Conventional Label*	*Situation/ Event*	*Focal Point*	*Actions*
Reality registration	Nonfiction: documentary	Direct observation of daily life	Persons	Natural
Reality simulation	Realism: psychological, drama, realism, romance	As if daily life affairs	Impersonated characters	Performed (staged, acting)
Believable fantasy	Adventure: action, thriller, comedy	Extraordinary events in daily life	Detached characters	Faked (invented, fabled)
Unbelievable fantasy	Fantasy: horror, sci-fi, cartoons	Extraordinary events, not in daily life	Caricatures	Absurd

Newer conceptions recognize how important perception is →

- It's complex and involves interpretation
- Both genre indicators, framing and media formats (top-down)
- And make believe…
- Perceptions, how it looks and feels, interpretation, processes (bottom-up)
- We seem to 'forget' it's fiction (sleeper effect, fake-news, reality TV)

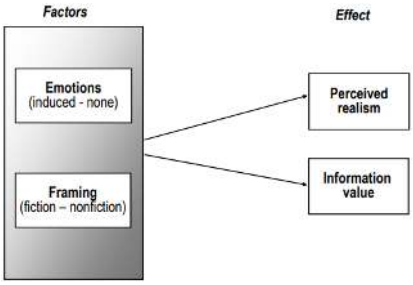
Reality in media coverage: making news is constructing reality rather than a picture of reality (Tuchman, 1978)

The blurry borders of fiction and reality

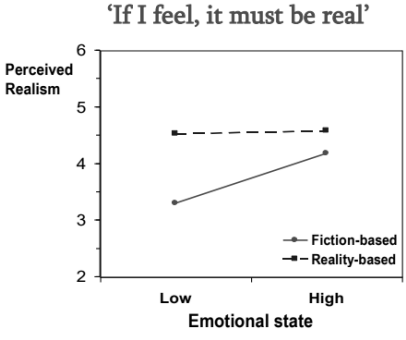
- Why would we take for real what we know is fabricated fiction, at best a manipulated representation of some reality, but not reality itself
- Would we have two different systems of processing information – one for reality and one for fiction?
- From an evolutionary point of view…?
- Parallel processing of media messages
- When it feels real, it must be real…

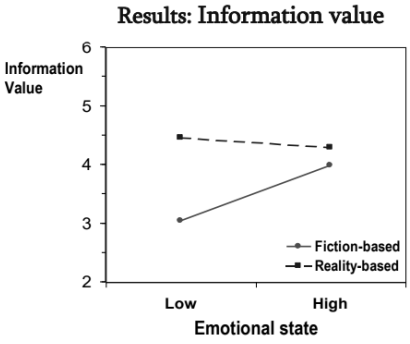
Emotions and processing media messages – experiment

- Docu drama – Roma family
- 2x2 design
- IVs: emotions and framing
- DV's: perceived realism and information value
- Control: emotional involvement
- Study model

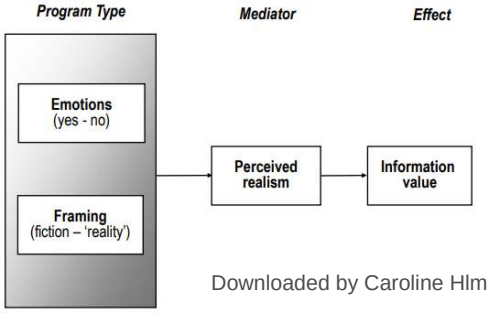


- Results





- Mediation model



Emotions guide processing media messages

- In study 1: manipulated emotions
- In study 2: emotional involvement (empathy)
- Adults vs adolescents (brain development)
- Emotion theory: emotions have a signalling function (''If I feel, it must be real'')
- Parallel processing of media messages: lower pathway has difficulties to distinguish fact/ fiction
- Evolutionary basis: real events – imagined events – mediated events

Processing realism (Hall, 2009; Shapiro & Lang, 1991)

- Factuality: does it portray real world events?
- Real world similarity: does it portray events that seem like they could occur
- ''We also assume that the higher-order processes make judgements about how ''real'' the events are and judgements about the source of the information (television, newspapers, direct experience, etc.)''

Processing realism

- Also: question of direction; top-down or bottom-up
- Processing guided by genre-indicators? Or,
- Processing guided by viewer's perception of reality of the stimulus? Or,
- Processing guided by emotional relevance which further affects realism perception?
- Or even more complex?

Perceptions of realism in fiction (Busselle & Bilanzic, 2008)

- ''Stories people tell''
  - Television content as narrative
  - The viewing process as active story construction
- Being more involved and transported into a narrative world → more susceptible to narrative content or persuasion
- Framed within a fictional program – narrative realism
- Reality soap → involvement/emotions, transportation, presence → perceived realism → impact

Example: world leaders vs movie characters (genres); world leaders were seen as more unrealistic and bad than movie characters – How?

1. Framing
   - Framed within a fictional program, fictional characters may appear realistic vs
   - Framed within reality context, a 'real' person may seem artificial, unauthentic
2. A cultural bias (bv ingroup vs outgroup): the world leaders in this study are not from the participants' own culture
3. Fusion: blurring borders between fact and fiction in media
   - Journalistic reporting and news broadcasts are seasoned with fictional techniques; and vice versa; fictional programs claim to be reality-based
   - Viewers fuse fantasy and reality or get lost in the fuzziness of mediated realities
   - Sensory feedback from emotional involvement may feed this

Merging of real and virtual worlds somewhere along the ''virtuality continuum'' – connecting real environments to virtual ones

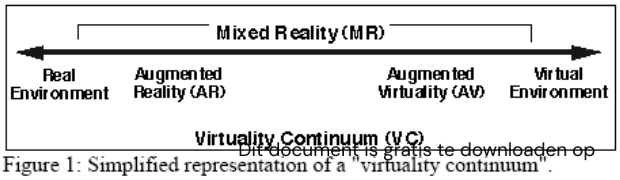


Figure 1: Simplified representation of a "virtuality continuum".

Play with fiction-reality frictions example: The Blair Witch Project (fake documentary → released as videogame a year later)

Today, we create our own realities – examples: the girl who made her family and friends believe (through social media) she was on holiday, Sweetie (virtual Philippine girl attracts real paedophiles) and Alice (carebot)

Blurring borders – future perspectives

- Fiction as ''apparent'' reality in a media landscape – increasing virtualities
- ''As technology increasingly mediates our connection to the world and each other, the resulting blurring between what is real and what is virtual will have profound and unexpected consequences for all human endeavours.''
- Sensory feedback enhances this 'blurring'

How perceived realism is measured – Three methodological weaknesses:

1. Most realism items do no correspond to any particular content or viewing experience
   - The least troublesome items asks about the realism of specific characters or events
   - Unclear what might make the character realistic or unrealistic
   - Realism judgements are likely to occur during viewing
2. Whether viewer make realism judgements on their own or because they are prompted
3. Offline (retrospective) vs online judgements

How it is defined – dimensions of perceived realism

- Plausibility: could exist in the real world
- Probability: the likelihood of existing in the real world or the frequency with which it occurs
- Magic Window: observe ongoing life in another place or inside the set itself
- Social realism: content is similar to life in the real world
- Identity: incorporation or involvement of content into viewers' real lives
- Utility: information is useful to the viewer in real life

Types of realism (within a 'story', narrative or mediated event)

- Character realism: media figures
- Behavioural vs form realism: characters' actions , behaviours, movements, posture (bv cartoons) (Bailenson et al, 2006)
- Situational realism: situations, events, surroundings, context
- Professional realism: expertise, professions, experience
- Story realism, narrative realism, fidelity: story, plot, narrative
- Graphic realism (sophisticated technology), (audio)visually persuasive
- Psychological realism: real experience; it looks real, it feels real

Offline vs online measurements

- Most measurements retrospective of memory-based judgements (recall): offline
- Online judgements: made during the reception and processing of information
  - Provide insight into realism judgements viewers make while watching
  - A thought-listing, sentence-completion task (in Buselle, 2004)
  - A dialing procedure (in Shapiro & Chock, 2003)
  - Stimulus-based procedure (in Van den Bulck, 2010)

Konijn et al (2009) – Emotion bias perceptions of realism in audovisual media: why we may take fiction for real

Potential explanations for the finding that emotional viewers seemed more inclined to take fiction for real than non-emotional viewers in light of recent literature on perceiving realism and emotion theory is discussed.

More and more fiction and fantasy programs claim to be based on facts or real-world happenings (bv reality shows). In our view, research is needed to understand how people interpret and perceive such hybrid programming or ambiguous depictions of reality in various media presentations.

A second development in contemporary media offerings is the increasing use of emotional portrayals and focus on viewers' emotions. Therefore, this study examines how emotions may affect individual perceptions of realism in audio-visual media, and how such perceptions may influence the information value that viewers attribute to media content. We assumed that we take fiction for real when our emotional system is alerted.

Cultivation theory states that individuals who watch television heavily are more likely to perceive the world as it is portrayed on television than those who watch less.

In this study, we defined perceived realism as the subjective viewer interpretation of the extent to which a media program contains a reflection of daily life (including situations, characters, behaviour, stories, etc), irrespective of the program makers' intentions.

Thus, our hypotheses received support from the data. Emotional viewers who watched an audio-visual message framed as fiction perceived more realism in it and attributed more information value to its contents than non-emotional viewers did.

However, the strength of our external mood induction in Study 1 may have prevented participants from becoming emotionally involved with the contents of the program itself. Therefore, we designed Study 2 to include a mood induction procedure that could more easily allow viewers to experience emotional involvement while watching. An additional reason for Study 2 is that we only invoked negative emotions in Study 1. Therefore, in Study 2, we applied a mood induction procedure that could evoke negative, positive, or neutral emotional experiences.

The previously reported results support our main thesis, which claims that emotional viewers perceive more realism in audio-visual contents and attribute more information value to them than non-emotional viewers do. Note that in Study 2, the viewers' significant emotions were due to involvement with the characters, story, and events in the stimulus materials (about the Roma family) and not to the mood manipulation.

To conclude, the hypothesized mediation of perceived realism could not be tested in Study 2 because framing the program type had no effect. However, both perceived realism and viewers' emotional involvement predicted the information value attributed to audio-visual media contents, with emotional involvement as the best predictor.

Hall (2009) – Perceptions of media realism and reality

Audiences' perceptions of media realism have been proposed as contributors to a wide range of media effects. However, the pattern of findings within the literature is complex and often inconsistent. The inconsistencies suggest that there are substantive gaps in our current understanding of the role perceived realism plays in audiences' responses to media texts. Hall reviews previous research on this topic and advances suggestions for future research.

Despite being the subject of a great deal of interest, perceived realism is difficult to define. Hall takes a relatively broad view of the subject.

Perceived realism: the may media content is seen by the audience to relate to the real world.

Two general ways of defining realism have tended to emerge in slightly different forms and under various names throughout the literature, namely realism as:

- Factuality: the degree to which a text is understood to accurately portray specific real-world events or people
  - Viewers' perceptions of this form of realism may vary both across individuals and different media texts. This conceptualization implies that audiences inevitably discount fiction as make-believe, and thus not real
- Real-world similarity: whether what is portrayed in text is like what the audience would expect to find in the real world
  - This conceptualization allows fiction to be judged as quite realistic provided it is consistent with what the audience member believes in the real world to be like – six ways in which media have been conceptualized as having the potential to be seen as similar to real life:
  > *Possibility*: whether something portrayed in the media could occur in the real world
  > *Probability*: the likelihood that something in the media would occur in the real world
  > *Identity*: the extent to which audience members involve themselves in the representation
  > *Utility*: how much something in the media is useful to the audience
  > *Visual persuasiveness*: the degree to which a text looks real or creates a compelling visual illusion
  > *Narrative realism*: the extent to which events within a media story are well explained and coherent with each other.

There is evidence that possibility and probability or typicality are the biggest contributors to general, retrospective judgments of the entertainment-oriented narrative media that have been the most frequent subject of study.

One of the primary reasons researchers are interested in the notion of perceived realism is because it is thought to contribute to the effects that might result from media exposure. Researchers working from several theoretical perspectives, including cultivation theory, social cognitive theory, and arousal theory, have considered this view.

Perceived realism does not seem to be uniformly associated with a greater match between media content and audience members' attitudes or behaviour. Although the notion that realism perceptions contribute to media effects holds intuitive appeal, the paucity of consistent findings in comparison to the volume of research that has addressed this issue is discouraging. It suggests that if perceived realism does play wider roles in media effects, they are often subtle and indirect.

One of the limitations of the research on this topic is that it is something of a patchwork. Perceived realism is often of secondary interest in studies that are focused on developing a particular theory or testing media effects on a particular outcome. To get a clearer grasp of if and when realism judgments make a difference to media effects, researchers need to address the topic more systematically. One way of doing so is to step back and conceptualize more clearly when and how realism judgments are made. These conceptualizations can be applied to models of media influence in order to craft more precise and theory-driven investigations into the roles that realism perceptions might play.

Research in social and cognitive psychology provides insight into these processes. One of the most important implications of this work to the study of perceived realism is that there is not one single process through which realism can be made, but rather several. Audience members are likely to evaluate media realism differently, for example, depending on whether the judgment is made retrospectively or online. However, models of each of these types of realism judgments are informed by the principle that humans have a limited pool of cognitive resources with which to make sense of what they encounter in the world, including media texts.

A genre that illustrates the complexity of audiences' judgments of nonfiction is reality television. As is the case with other narratives, realism perceptions of these programs seem to be associated with specific ways of processing or engaging with the material. However, the nature of the association seems to differ. Whereas transportation or engagement with fiction narratives seem to depend on a lack of critical realism judgments, some forms of engaging with reality programs seem to be based on suspicion of certain elements of the programs' realism.

Reality television: a distinct genre made up of entertainment-oriented programs that feature nonprofessional actors playing themselves whose words and behaviour are presented as being unscripted.

Viewers seem to distinguish reality programs from others shows and to define them as a group in part because of their ambiguous factual state somewhere between the real and the fictional.

Reality television viewers seem to be interested in watching because the cast members are real or authentic, but they seem to become engaged in watching, in part, because the presentation of the cast is often manipulated or insincere.

Perceived media realism is a concept that has long intrigued scholars. Recent shifts in media content and in the development of new technologies suggest exciting new avenues for further research in this area. However, to move the field forward, researchers need to be more aware of the processes through which realism judgments are made so that they can be more precise in their examination of the roles that the judgments may play in media reception. Furthermore, to stay relevant, this area of study needs to widen the type of media and media content that it considers.

SESSION 9 – MEDIA VIOLENCE AND ITS EFFECTS

Bandura's Bobo Doll experiment (1961)

- 1960's: debate about child's development → genetics, environmental factors or social learning from others around them?
- Bandura aims to proof observational learning: children would copy an adult role model's behaviour
- Participants: 36 boys and 36 girls (3-6 years old)
- Conditions: group 1 saw an aggressive adult, group 2 saw a passive adult and group 3 (control group) had no role model
- Balanced groups in terms of personalities
- Tested individually
- Observation through one-way mirror
- Criticism: not social learning per se, children observing an adult model utilizing violence are more likely to believe that this type of behaviour is normal (do the observations reflect aggressive behaviour or are the kids just following instructions)

The Colombine High School massacre (April 1999, US): 2 students killed 12 students and 1 teacher, injured 14 other students and committed suicide after… After the massacre: many explanations and rumours → a psychiatrist argued that the killers' actions are explained by the student-killers' immersion in violent games

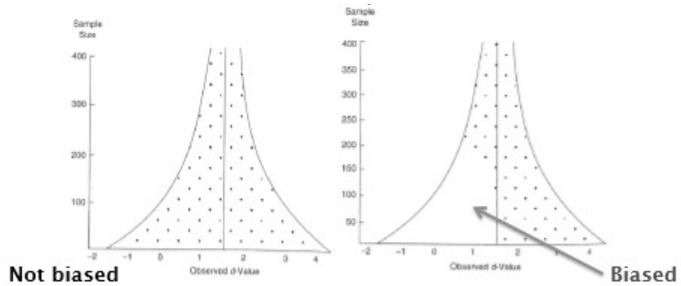
- Many incidents followed (bv Anders Breivik who trained himself with Call of Duty)
- However: NO conclusions can be drawn

Problematic issues in violent video games research

1. Publication bias
2. Measurements: violent content and aggressive behaviour
3. Effect sizes
4. Causality: do video games make players more aggressive?

1 Publication bias

- Why publication bias: non-significant results (bv no effects of violent games on aggression) → less frequent published
- Not included in meta-analyses

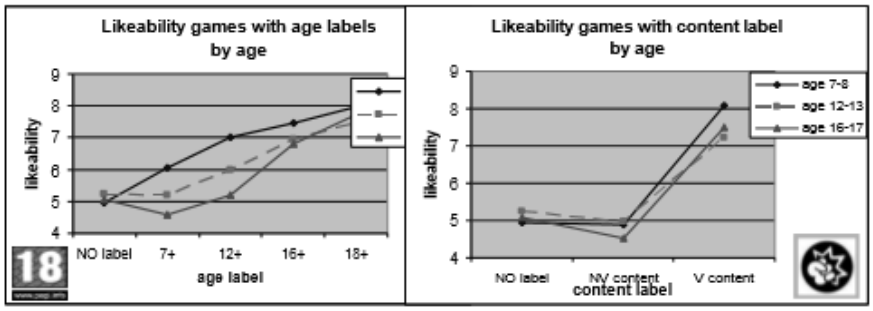


- How to overcome publication bias?
  - Publish also non-significant results
  - Include these non-significant results in meta-analysis
  - Test for publication bias when preparing meta-analysis

2 Measurement: video game violence exposure

- How to assess video game violence?
  - Subjective method: scale 1-5
  - Objective method: official ratings (bv 3-18+ labels)

- Can PEGI labels work as forbidden fruit? (Bijvank et al, 2009)



Higher age labels significantly **increased the likeability of games.**

Violent content labels were significantly **more attractive.**

- Adding warning and age labels to video games showed to have a boomerang effect on children and adolescents, boys and girls, including the very young ones (7-8yrs) → forbidding violent video games will make them even more attractive

2 Measurement: aggression

- *Aggression*: behaviour aimed at causing harm or pain, psychological harm or personal injury or physical distraction – an important aspect of aggressive behaviour is the intention underlying the actor's behaviour → intentionally harming another person (unjustified) who is motivated to avoid that harm
- Experimental studies: coders' ratings of observed behaviours (hitting, kicking, pushing), physical measures (shock, noise blasts (CCRT), hot sauce, ice water)
- Other stories (cross-sectional, longitudinal): self-reported aggression, other-reported aggression (teacher reports, peers, parents), physical measures (shock or noise intensity, convictions for violent crimes)
- Competitive Reaction Time Task (CRTT, Taylor, 1967):
  - Participants are told that they play a game with a second player (in reality a computer)
  - The goal is to be faster to press the mouse button if a target square turns from yellow to red
  - The 'loser' has to endure a blast of white noise, the winner chooses the intensity
  - Advantages/problems: issues in standardization (many different test procedures, at least 13 variants to calculate aggressive behaviour score)
- Comparison of the different published analyses of the CRTT (Elson et al, 2014):
  - Large differences in significance levels and effect sizes between analysis procedures
  - Unstandardized use and analysis of the CRTT have substantial impacts on the results obtained, as well as their interpretations

3 Effect sizes: media violence effects vs other

- On average, media effects are 'small'
- Similar for media violence effects
- However, not smaller than effects in other disciplines (psychology, pedagogy and medical sciences)
- Effect of VGV on aggression as strong as effect of condom use on risk of HIV infection
- Effect size depends on X-number of factors (the more factors, the smaller effects)
- Meta-analysis – violent video games effects (Anderson et al, 2010):
  - Average effect size of VVG on aggression
  - Exposure to video game violence is a causal risk factor for
  > Increased aggressive cognitions, affect, arousal
  > Decreased pro-social behaviour and empathy

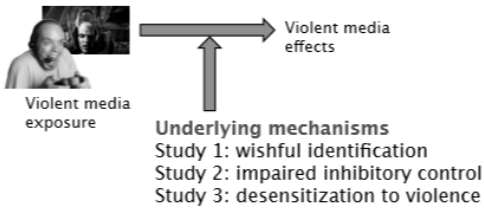
4 Is media violence a causal factor for aggressiveness? – Conditions to asses causality:

- Causal effect of X on Y (independent variable (cause) → dependent variable (effect))
- Exclusion of external factors
- Independent variable(s) under control
- Vary, manipulate or create levels (comparison)
- Check for similar attractiveness of stimuli
- A control or comparison group
- Random assignment of participants to conditions

Media effects research (in general): media exposure → after media exposure (effects) = too simple (bv orientation – stimulus – orientation – response model)

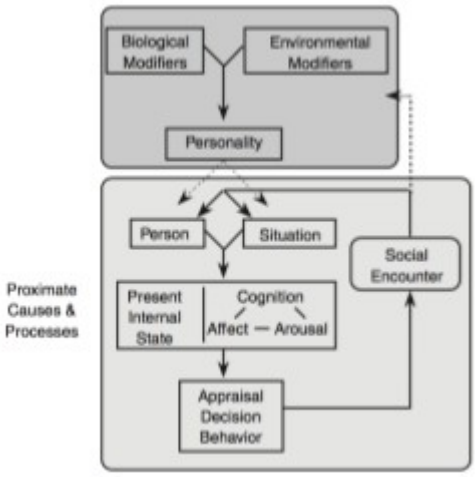
Debate among scholars

- Anderson et al (2010): 1st meta-analysis on media violence effects
- Comment by Ferguson and Kilburn (2010): much ado about nothing!
- Bushman, Rothstein & Anderson (2010): much ado about something!
- Ferguson & Konijn (2015):
  - Peaceful debate on videogames
  - Studying underlying mechanisms of aggression
  - Rather than measuring aggression itself



General Aggression Model (GAM, Anderson & Bushman, 2001)

- Interaction between individual and situational factors
- Likelihood of aggressive behaviour (short-term)
- Development of aggressive personality (long-term)
- Individual factors: gender (male), age (young)
- Personality traits: aggressiveness (H), sensation seeking (H), empathy (L)



Example study 1 – Wishful identification
I wish I were a warrior: the role of wishful identification in the effects of violent video games on aggression in adolescent boys (Konijn et al, 2007)

- Demonstrate causality
- Underlying mechanism
- Susceptible target group: adolescent boys, low IQ
- Measurement of aggression (adjusted version of the CRT-task)
- Individual differences measures
- Model- hypotheses

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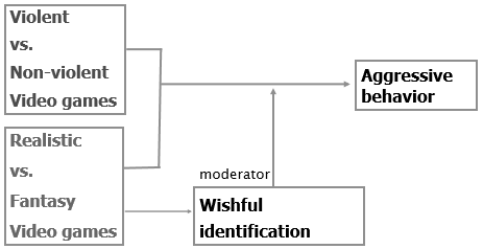
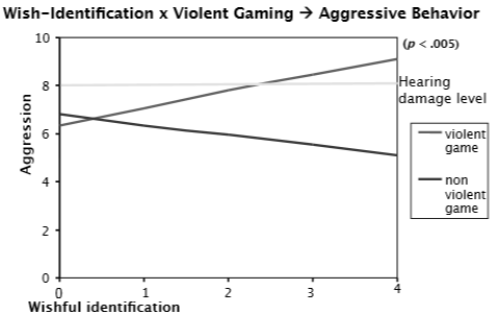


Design: 2x2 (violent vs non-violent – realistic vs fantasy)

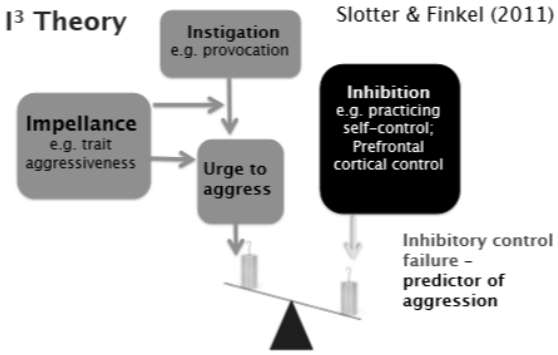
- Participants: male adolescents at VMBO (N=112, M-age=14)
- Procedure: personality traits 2 weeks before (trait aggressiveness, sensation seeking), games manipulation (20 minutes), aggression measurement (adjusted CCRT) and wishful identification(self-report)
- Aggression measurement (CCRT): two important additions; (1) prior training (exposure to noise and rate noise levels), (2) warning (level 8 and above can cause serious damage)



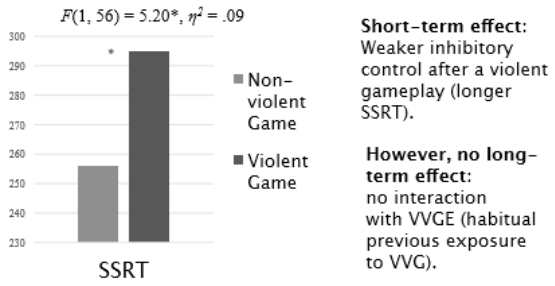
- Conclusion: adolescent boys, of lower educational ability level, were more aggressive after playing a violent video game than after playing a nonviolent game, especially when they wishfully identified with the hero of a violent game
- Realistic games further increased wishful identification (compared to fantasy games)

Study example 2 – Inhibitory control failure
Effects of violent gameplay on inhibitory control (Miedzobrodzka et al, under review)

- H: playing violent games, as compared to non-violent ones, temporally impairs inhibitory control



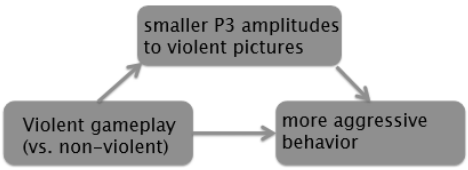
- Method: inhibitory control measurement; Stop-Signal task (Verbruggen & Logan, 2008, inhibition of ongoing action) → better inhibitor control (smaller SSRT, Stop Signal Reaction Time)
- Method 2x2 experiment
  - Violent Video Game Exposure (VVGE) – habitual gaming: high vs low exposure
  - Game manipulation (lab): violent (18+) vs non-violent (3+)



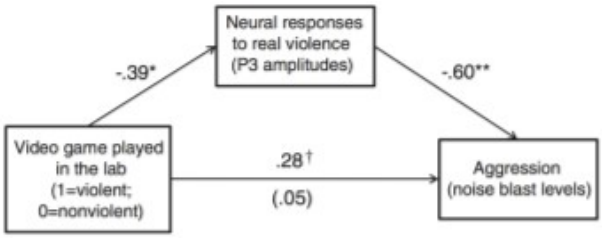
- Conclusion: exposure to violent games effects in impeded inhibitory control in a short-term, it could predict problems in controlling one's behaviour just after playing a violent game

Study example 3: desensitization
This is your brain on violent video games: Neural desensitization to violence (Engelhardt et al, 2011)

- Desensitization theory: exposure to violence → habituation of the initially negative cognitive, emotional, and physiological responses (Funk et al, 2004)
- *Desensitization*: a reduction in emotion-related physiological reactivity to violence (Carnagey, Anderson & Bushman, 2007)
- Exposure to media violence related to lower physiological responses (lower heart rate, lower GSR, sensitive to emotional arousal)
- Neural desensitization to violence:
  - Positive ERP component 300ms after stimulus
  - Sensitive to the arousal properties of stimuli that activate the aversive motivational system
  - The smaller P3 response to violent images → weaker activation of aversive motivation → higher desensitization
- Hypotheses



- Procedure: violent vs non-violent video game (25min) → picture viewing task (EEG recording) → CCRT (aggression task)
- Results and conclusion: mediating effect of desensitization to real-life violence (P3) on the increase in aggression that occurs after playing a violent relative to a nonviolent game



- Neural desensitization to violence predicts the causal effect of violent video game exposure on aggression

A risk factors approach (Anderson, 2007; et al, 2010)

- Risk and resilience framework (bv cumulative model)
- Media violence acts like other risk factors for aggression
- Consider multiple factor that may facilitate or inhibit aggression
- Risk factors accumulate their influence on aggression more than the sum of each individual factor

Summary

- Media violence research is still developing research area
- Problem: defining and measuring 'aggression' from media violence and comparing violent content
- Media violence → aggression: not a 1-to-1 relatonship
- Media do not affect everyone the same way under all circumstances
- Individual differences, underlying mechanisms
- Search for risk and protective factors
- Rather a 'risk factors approach': risk factors accumulate their influence on aggression more than the sum of each individual factor

Konijn et al (2007) – I wish I were a warrior: the role of wishful identification in the effects of violent video games on aggression in adolescent boys
Konijn randomly assigned Dutch adolescent boys with low education ability to play a realistic or fantasy violent or nonviolent game. Next, they completed with an ostensible partner on a reaction time task in which the winner could blast the loser with loud noise through headphones (the aggression measure). Participants were told that high noise levels could cause permanent hearing damage.

Habitual video game exposure, trait aggressiveness, and sensation seeking were controlled for.

The most aggressive participants were those who played a violent video game and wished they were like a violent character in the game. These participants used noise levels loud enough to cause permanent hearing damage to their partners, even though their partners had not provoked them.

Players were especially likely to identify with violent characters in realistic games and with games they felt immersed in.

Adolescents are especially likely to look for role models to identify with because they are in the process of developing their own identities. Adolescence is a time to experiment with different roles. Media figures play an important part in this developmental process because they offer a variety of possible selves that adolescents can experiment with.

Ferguson et al (2015) – Digital poison? Three studies examining the influence of violent video games on youth
The role of violent video games in the development of aggression and mental health issues in youth continues to be controversial in the scholarly community and general public. Compared to college students, few studies have directly examined the potential impact of violent video games on youth and current evidence is mixed. The current article attempts to address this with three studies examining violent game play in youth aged 12–18. In Study 1, youth were randomized to play closely matched action games with either violent or non-violent content. Youth were given the opportunity to act aggressively using an ice water task. Study 2 was a conceptual replication of Study 1, with slower narrative games rather than action games. Study 3 examined the issue in a correlational study of youth, contrasting exposure to violent video games in youth's personal lives to their exposure to violence in controversial books while controlling for other variables including family, peer and personality variables. None of the studies provided evidence for concerns linking video game violence to aggressive behaviours or reduced empathy in youth.

Study 1: the first study examines the degree to which randomized video game violence exposure in a laboratory setting influences behavioural aggression in a sample of youth. Two hypotheses are tested, first that video game violence has a direct and general influence on increasing aggression and, second, that video game violence will interact with mental health symptoms to increase aggression in youth with pre-existing mental health symptoms. In the first study, action oriented games were employed.

Study 2: study 1 found little evidence to link action games with violence to behavioural aggression in the lab. However, it may be erroneous to consider the concept of violent video games as unitary. Different violent games may have differing qualities such that some may increase aggression whereas others do not. Thus, in the second study, a conceptual replication is presented involving the use of more narrative games rather than action oriented games. Narrative games may involve more immersion and more identification with characters involved (see Konijn et al, 2007) and thus may have more impact that action oriented games. Thus Study 2 tests the hypotheses that violent video games may increase aggressive behaviour either in general, or in interaction with mental health symptoms in a sample of youth.

Study 3: in the third study we sought to examine the impact of violent video games on real-world aggressive behaviours using a survey research approach.

As with studies 1 and 2 this study will concern itself with the interaction of mental health symptoms and violent game exposure. This study will also concern itself with exposure to violence in books to provide some comparison between video games and literature. Such a comparison would highlight arguments that the interactive nature of video games may make them more harmful (Sherry, 2001). In this study, three hypotheses are tested, namely that violent video game exposure will be correlated with youth violence and aggression, that video game violence will interact with mental health symptoms in predicting youth violence and that the influence of violent video games will be greater than for violence in books.

The potential impact of violent video games on youth behaviour remains a controversial one. Scholars, politicians and parents continue to debate whether violent video games are a public health risk or a harmless form of entertainment. In the current article, three studies, two experimental and one correlational, with youth examined the impact of violent video games on behavioural aggression, empathy and (in the correlational study) youth violence and civic behaviours. Taken together, current results found little evidence for a causal or correlational relationship between violent video game play and behavioural outcomes. The current results also found little evidence to support the belief that violent video games may interact with mental health symptoms in some youth. Neither violent games nor violent books were associated with negative outcomes in the correlational study. And parental shielding of youth from violent media appeared to have a negligible impact on behavioural outcomes aside from a small correlation in the first study. Lastly, parents appear to have very divergent views on the issue of media and media violence, with parents who are less familiar with video games being more inclined to take a sterner approach to media.

Engelhardt et al (2011) – This is your brain on violent video games: neural desensitization to violence predicts increased aggression following violent video game exposure

Desensitization theory proposes that repeated exposure to violence results in habituation of the initially negative cognitive, emotional, and physiological responses people experience when they see blood and gore. Desensitization to violent media, in turn, has been theoretically linked to increases in aggressive behaviour. Habitual exposure to violent media may reduce aggressive inhibitions and empathy for the pain and suffering of others, and weaken typical aversions to violence, all of which should increase the likelihood of aggressive responses.

Acute desensitization following game play was determined using the amplitude of the P300 (P3) component of the event-related brain potential (ERP) elicited by photos depicting real violence, and aggression was measured via levels of unpleasant noise blasts participants gave an ostensible opponent.

A small P3 response to violent images indicates weaker activation of aversive motivation (and relevant decision-making processes related to withdrawal behaviour). Based on these ideas, we predicted that participants randomly assigned to play a violent video game would show smaller P3 amplitudes to violent images compared to participants assigned to play nonviolent game. Following from this prediction, and given that aversive/withdrawal motivation is incompatible with aggression, we also predicted that participants who play a violent (relative to a nonviolent) game would subsequently behave more aggressively. Finally, we predicted that the P3 elicited by violent pictures would negatively predict aggressive behaviour, and would mediate the relationship between violent game exposure and aggressive behaviour

For many years, theorists have posited that desensitization to violence should increase the likelihood of aggressive behaviour. Although numerous reports have shown that chronic and even short-term exposure to media violence can lead to desensitization, no previous research has shown that acute desensitization to violence can account for changes in aggression. The current results are the first to demonstrate this link experimentally, at least for individuals whose prior exposure to video game violence was low, playing a violent video game caused a reduction in the brain's response to depictions of real-life violence, and this reduction, in turn, predicted an increase in aggression. This finding also suggests that individual differences in self-reported habitual exposure to violent games are tapping into real differences in the gaming experience.

SESSION 10 – INTERACTIVE MEDIA, PRESENCE AND FLOW

Media (technology) evolution: the rise of interactivity
(Cave) paintings → printed language, books → radio (channel switching) → computers with software → websites → video games → virtual reality (VR) technology (''presence'' technology) → robots

Real life interactivity (non-mediated)

1. Social interaction (give-and-take)
2. Manipulation of environment

- Example: ''Should we go out?''
  1: ''Yes, nice idea. Where should we go?''
  2. ''The duck is yellow''

Mediated interactivity (through a medium, bv game console, computer, etc)

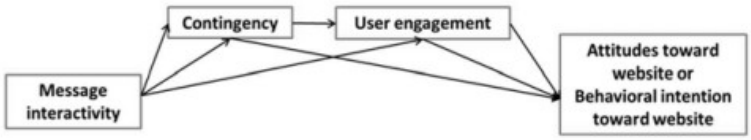
Two types of media interactivity

- Interactivity as contingency
  - Also called: message interactivity
  - Building on logic of social interaction, conversations
  - Feedback should meaningfully relate to prior input
  - Logic more prominent in communication science
- Interactivity as manipulation of environment
  - Also called: functional interactivity
  - Building on idea of ''responsive environment''
  - What/how many elements can be manipulated
  - Logic more prominent in human-computer interaction (HCI) research

Interactivity as contingency – website example: the website replies to your previous searches/clicks/answers

Message interactivity – Sundar et al (2014)

- Do people perceive interactivity? How does interactivity affect engagement and liking?
- Contingency: feedback that considers input (is exclusive to one's input), achieve a sense of dialogue
- Website: movie database (five versions)
  - Interaction history (low, medium, high)
  - High + synchronous char (make-believe ''machine vs human'')
- N = 110, task: find best movies for film club
- Perceived contingency: high (with or without chat) > low, medium
- Engagement: high, high (human agent) > low
- High interactivity (with or without chat) → higher perceived contingency → higher user engagement → better attitude and intention to use website



Interactivity as manipulation of environment/functional interactivity – Fallout 4 VR (game) example: you can manipulate a lot in the media environment that is displayed

Factors determining degree of interactivity (Lombard & Ditton, 1997)

1. Number of user inputs: audio, haptic, body movement
2. Modification possibilities:
   - Spatial organization (bv where things are displayed)
   - Temporal organization (bv when things are displayed)
   - Intensity (bv how many/strongly things are displayed)

➔ Degree to which users can control or manipulate each object/attribute of content (Steuer, 1992)

3. Mapping of input/output
   - Degree of correspondence between type of user input and type of medium response
   - From artificial/arbitrary to natural
   - Arbitrary vs natural ''head'' input (keyboards vs head tracking)
   - Arbitrary vs natural ''hand'' input (joypad vs WEE hand tracking)
4. Speed of response: speed with which medium responds to user input (''lag''), from delayed to immediate (real-time)

Spatial presence: ''being there'' in the mediated space (bv virtual reality glasses)
Social presence: ''being (there or here) together with another social being'' (bv sims online)
Augmented presence: the feeling that something ''is here'' (bv Pokémon go)

Spatial presence: the feeling of being there in the mediated space – Characteristics:

- Feeling that virtual space is one's actual space
- Feeling that own body is located in virtual space
- Possibilities of action (what can I do next) are perceived with respect to virtual (and not real) space
- Adaption of body movement and postures (bv ducking head if moving through low door in virtual space)

Social presence: the moment-by-moment awareness of the co-presence of another sentient being accompanied by a sense of engagement with the other (Biocca et al, 2001) – Requires:

- Social perception of other (other seems alive/sentient being/autonomous intelligence)
- Sense of co-location/co-presence (and, thus, spatial presence) – or just sense of co-awareness?
  - Virtual reality vs mobile phone call
- Example: CISCO teleconfering system (colleagues meet at a telepresence site, the shaded participants are on high definition video screens)

Augmented presence

- Virtual objects superimposed upon or composited with the real world (incl holograms)

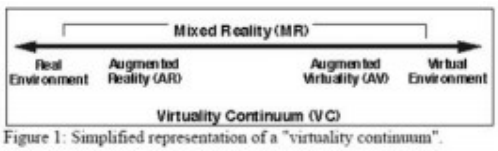


Figure 1: Simplified representation of a "virtuality continuum".

- Important: seamless integration (bv spatial perspective)
- Example: Microsoft HoloLens

Does social presence enhance net-based collaborations (Bente et al, 2008)

- Can we replace costly face-to-face meetings?
  - But text-only might perform poorly (lack of cues, time pressure)
  - Non-verbal cues and co-presence matter

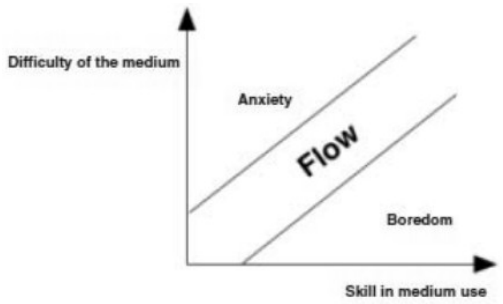
- N = 150 as dyads in collaborative shared workspace: find best out of 6 job applicants
- Comparison: text chat, audio-video, low-fi avatar, high-fi avatar → experience (bv intimateness, co-presence, etc) and effectiveness (satisfaction, competence, etc)
- Overall result: text chat performed poorly, real-time response was important (all other conditions)

Flow: state of profound task-absorption, cognitive efficiency and intrinsic enjoyment that makes a person feel one with the activity in which he or she is involved (Moneta, 2004) → flow is not identical to presence!

Flow (Csikszentmihalyia, 1988, 2008; Schaffer, 2013)

1. Intense and focused concentration on what one is doing in the present moment
2. Immediate feedback informing about one's competence
3. A sense of personal control or agency (optimal challenge)
4. Loss of reflective self-consciousness
5. Distortion of temporal experience (time flies by)
6. Experience of the activity as joyful, intrinsically rewarding, such that often the end goal (bv winning) is just an excuse for the process

Flow needs optimal difficulty (bv Sherry, 2004)



Flow and media interactivity example: Bubbleshooter

- Immediate performance feedback (score)
- Optimal challenge/difficulty level
- Losing track of time
- Focus on clear task

Flow: positive state of being optimally challenged

Sundar et al (2016) – Theoretical importance of contingency in human-computer interaction: effects of message interactivity on user engagement

The concept of interactivity has elicited profound interest among scholars because it signals a fundamental shift in the way messages are handled during the process of communication, from one of transmission to that of exchange.

The linear mathematical model of communication was extended to include a two-way reciprocal exchange in the interactive model of communication. The source and receiver elements are connected via bi-directional arrows, signifying a conversational partnership that is fundamental to all communication processes. The notion of a conversational ideal has existed since the early days of media studies.

A critical determinant of message interactivity is the presence of contingency, that is, the messages we receive are contingent upon the messages we send, leading to a threaded loop of interdependent measures. While this

conversational idea is easily achieved in face-to-face and computer-mediated communication (CMC), imbuing contingency in human-computer interaction (HCI) is a challenge.

In HCI, where human users interact with programmed systems such as webpages, automatic kiosks, or robots, how do user-to-system message exchanges approach to the conversational ideal seen in user-to-user dialogue.

Sundar conducted an experimental study by systematically varying the level of message interactivity offered in an online movie search site, designed to afford varying levels of contingent, back-and-forth interaction to the user. Five different versions of the site were especially built for this experiment varying in the types and levels of message interactivity afforded:

- Interaction history: a type of message interactivity that explores the variations in the extent to which the site displays the back-and-forth interactions between the system and the user, this was varied in an ordinal manner as low, medium, and high display of interaction history
- Chatting function: a type of message interactivity that consists of a synchronous chatting function, with two conditions showing variations in the attributed source of interaction (machine vs human) so that Sundar can empirically test the role played by perceived contingency in determining the effects of message interactivity.

Interactivity has been operationalized in many different ways. Simply equating interactivity with action possibilities cannot elaborate what precisely the user can act on and whether these actions carry any psychological importance. This warrants a more systematic investigation of theoretical paths that explain the how of interactivity effects. To do so, Sundar examines the path proposed in the interactivity effects model, where perceived contingency is considered the theoretical mediator via which message interactivity influences communication outcomes.

Interactivity: affordances (bv structural features with action possibilities) that enable users to interact with the system and/or with another user in a contingent manner to achieve a sense of dialogue.

Message interactivity: the amount of interaction history displayed by the site and the presence of the live chat feature.

Sundar considers three sets of user perceptions to be critical for evaluating the success of message interactivity:

- Perceived contingency: psychological verification of the process underlying interactivity
- Perceived interactivity: an assessment of the degree to which interactivity was achieved
- Perceived dialogue: extent to which the desired objective of interactivity was realized
- ➔ While these are distinct perceptions, the literature reviewed by Sundar suggests that all three are important, positive correlates of message interactivity

Sundar developed four hypotheses and one research question:

- H1: the greater the amount of interaction history displayed on the interface, the higher the perceived contingency (H1a), perceived interactivity (H1b), and perceived dialogue (H1c)
- H2: adding a live chat affordance to interaction history on an interface will increase perceived contingency (H2a), perceived interactivity (H2b), and perceived dialogue (H2c)
- RQ: will there be a difference in user perceptions of contingency, interactivity and dialogue when users have a live chat interaction with Human Agent, compared with a Chatbot?
- H3: perceived contingency will mediate the effect of message interactivity on user engagement, attitudes, and behavioural intention toward the website

- H4: user engagement will mediate the effect of message interactivity on attitudes and behavioural intentions toward the website

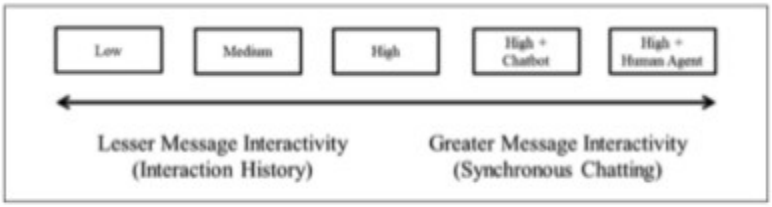


Figure 1. Variations of message interactivity, representing the conceptual basis for the five experimental conditions.

but is than Interaction history can heighten perceptions of contingency and dialogue, perceived as less interactive chatting. However, the chat function does not appreciably increase perceived contingency or user engagement, both of which are shown to mediate the effects of message interactivity on attitudes toward the site.

Summarized, the level of message interactivity, operationalized as the amount of interaction history displayed by the site and the presence of the live chat feature, significantly affected participants' evaluations of the website. Participants rated the site as being most contingent and most absorbing when the highest level of interaction history was combined with a human chat agent. They also felt a greater sense of dialogue in that condition and the other live chat condition (featuring a chatbot) compared with the conditions featuring Low or Medium levels of interaction history (with the Medium condition considered the least conducive for dialogue). They were more willing to recommend the site to others and to know more about the site when it provided a human chat agent. However, they evaluated the site as most appealing when it offered the Chatbot feature. Regardless of humanness, the presence of a chat agent boosted perceived interactivity of the site. Table 1 summarizes these findings. Finally, a mediation analysis showed that the effect of interactivity on attitudes and behavioural intentions toward the site were mediated by perceptions of contingency and user engagement.

Bente et al (2008) – Avatar-mediated networking: increasing social presence and interpersonal trust in net-based collaborations

Sharing workspaces and collaborative virtual environments allow for real-time information interchange and the synchronization of distributed working efforts over large distances. However, real-time access to information is only one determinant of efficient Net-based collaboration. Even more relevant in individual, societal, and economical respects could be the possibility to substitute face-to-face (FtF) meetings, which despite high costs are still the preferred interactional setting when it comes to more complex communication tasks involving socioemotional aspects.

Avatars: artificial, computer-animated representations of human interlocutors within virtual environments.

Bente addresses multiple questions in his study. Does traditional text-based computer-mediated communication (CMC) really suffer from non-verbal cues filtered out? And in which way can it benefit from the inclusion of analogous audio and video channels? It is doubtful that the visual channel adds value to audio in telecommunication at all. In remains unclear in which respect avatar representations are psychologically different from video transmissions and how structural particularities of the avatar medium concretely affect the process and outcome of CMCs.

Bente pursued a cross-modality approach within CMC, which includes for the first time traditional text-based CMC, voice-over IP, Net-based videoconferencing, and avatar-mediated communication. To guarantee comparability, all modalities are embedded in the same shared workspace in which a standardized collaborative task has to be solved, and a unified measurement approach is chosen to capture the focused socioemotional as well as behavioural effects. The study is based on three sets of research questions including global media effects as well as differences between particular media subsets:

- RQ1: do the compared communication modes produce significantly different effects with respect to social presence, interpersonal trust, and perceived communication quality in Net-based

collaborations? If so, can these differences be interpreted in line with the assumption of a linear relation between channel capacity and socioemotional media effects?

- RQ2: do the different modalities produce objectively measurable differences in communication behaviour, in particular in nonverbal activity and visual attention? Marked differences can be expected between the modes using visual channels (avatars, audio–video), mere audio (no visual information), and text chat (reading, typing). Do, more specifically, audio–video and the avatar conditions differ?
- RQ3: Does the appearance of avatars matter with respect to the socioemotional and behavioural variables under investigation? Variation within the avatar condition was included to control for the effects of a specific appearance. Additionally, recent findings indicate that avatar appearance, in particular avatar realism, can have a significant effect. Thus, a more specific question is posed: Does avatar realism significantly affect the outcome variables?

Significant differences were found between text chat and all other communication modalities in perceived intimateness, co-presence, and emotionally-based trust. Microanalyses of nonverbal activity and visual attention point to similarities between video and avatar modes, both showing higher levels of exposure to the virtual other and visual attention, in particular in the initial phase of interaction as compared to text and audio.

The evidence available from this study indicates that avatars have to be grouped together with the audio and video modalities. In most of the dependent variables, the avatar conditions show no significant differences from the video condition. This is promising, as there seems to be no relevant information loss when using virtual characters instead of video. However, the two media are also not different from audio with respect to social presence, trust, and user satisfaction. In contrast to the verbal judgments, the behavioural data point to basic similarities between video and avatar conditions in terms of nonverbal activity and visual attention.

Whereas audio and video are limited with respect to increasing co-presence, avatar platforms offer new possibilities to overcome basic restrictions of traditional media.

Virtual worlds and avatars could thus be a means to contextualize social interaction and foster the salience of nonverbal information instead of just providing high-fidelity transmission channels for visual cues. If this were to come true, avatars could be more than just virtual equivalents of a video- conferencing system. Moreover, the plasticity of avatar representations (i.e., the possibility to modify appearance and behaviour for strategic purposes) is definitely a unique property.

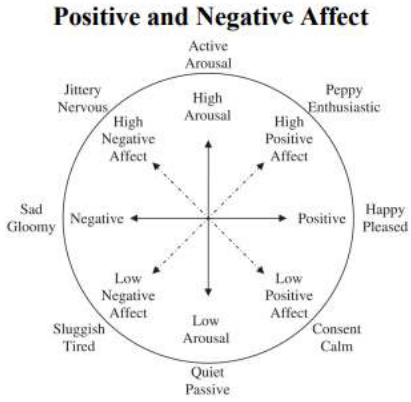
SESSION 11 – MEDIA AND PSYCHOLOGICAL WELL-BEING

The positive turn in psychology

- Move away from a total focus on a ''disease model'' of the mind
- What makes people happy and healthy?
- Maslow: hierarchy of needs and self-actualization
- Seligman: how people ''flourish'': positive emotion, engagement, relationships, meaning, achievement

Schreier (2006) distinguishes four aspects of well-being: subjective, psychological, social and physical well-being

Subjective well-being



- Hedonic indicators are most relevant
- Presence of positive emotion
- Absence of negative emotion
- Life satisfaction
- Self-esteem

PANAS (Watson et al, 1988): measures well-being over different time-spans (moment-day-week-month-year-general) with a scale from 1 (very slightly/not at all) to 5 (extremely)

Self-esteem can be measured by self-evaluation or a ''sociometer'' (Leary et al, 1995)

One's subjective well-being is largely how one believes they are doing in life. Perceptions are important, but may be biased in varying directions (influence of personality).

Mood management

- Arousal and hedonic tone (+ disruption and affinity)
- Role for eudaimonic experiences?
- Do people actually receive mood benefits?
  - Typically short-term
  - Our affective forecasting is poor (Wilson & Gilbert, 2005)

Growth and well-being

- In contrast to the hedonic indicators and role of perceptions in subjective well-being, psychological well-being is also characterized by Eudaimonia and personal growth
- *Eudaimonia*: ''human flourishing''; a contented state of being happy and healthy and prosperous
- Ryff (1989) about eudaimonia: it's about self-acceptance, positive relations, autonomy, environmental mastery, purpose in life and personal growth
- Self-determination theory (Ryan & Deci, 2000): satisfaction of intrinsic (vs) extrinsic motivations (autonomy, competence and relatedness) → meeting these needs will increase personal growth, satisfaction and vitality

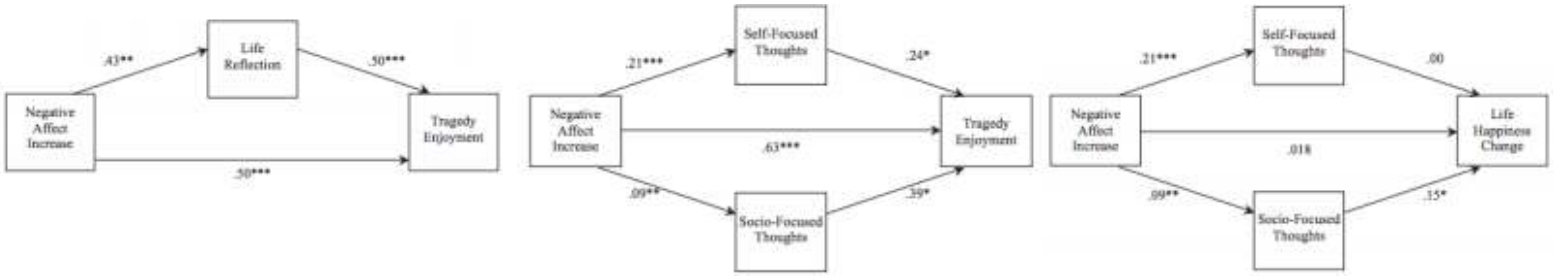
Social well-being – Keyes (1998): social integration, contribution, coherence, actualization and acceptance

Interrelationships between subjective psychological and social well-being (and health), there are some fuzzy distinctions and overlap, for the most part conceptually distinct

Hedonic vs eudaimonic entertainment experience

- Oliver & Bartsch (2010): distinct experiences

- Knobloch-Westerwick et al (2013): eudaimonic experiences
  - Participants watched abridged version of film (''tragedy viewers count their blessings'')



Social components

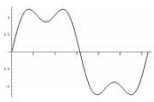
- Social compensation
- Parasocial interaction and parasocial relationships
- Reading fiction and social skills
  - Mar et al (2006) ''Bookworms vs nerds'': reading fiction (and more of it) is connected to more empathy and social ability (no true of non-fiction reading, robust effect after controls)
  - Djikic et al (2013) ''Reading other minds'' (but replication problems)
- Social comparison theory (Festinger, 1954): self-evaluation, self-improvement and self-enhancement
- Social comparison and media
  - Social media (Johnson & Knobloch-Westerwick, 2014): self-enhancing downward comparisons
  - Makeover shows (Nabi & Keblusek, 2014): ''Inspired by hope, motivated by envy''
- Social comparison and attainability (Knobloch-Westerwick & Romero, 2011)
- Downward comparisons for contrast vs upward comparisons for affiliation (Buunk & Ybema, 1997)

Recovery

- Psychological detachment: stress and strain can carry over into later tasks, disengagement is necessary
- Relaxation: breaks are needed from demands on the physical and mental systems
- Mastery experience: feeling capable, re-focusing goals and building new resources
- Control: creating distance from stressors and choosing own goals

Self-control, media and recovery

- *Ego depletion*: self-control is exhaustible, this is why change is hard
- Strength model of self-control:

  (but replication problems)
- Media seem to be more

  appealing when self-control is depleted
- Media reception may have the potential to restore self-control energy
- Theoretical accounts
  - Self-Determination Theory
  - Social Surrogacy
  - Temporarily Expanding Boundaries of the Self
- Videogame play is common following stress and strain (Reinecke, 2009)
- Recovery of vitality (bv self-control) occurs after playing games, especially when they are interactive (Reinecke et al, 2011)

Choices and effects – Pair and share: (1) an instance of when media choice provided you with the desired effect on well-being or (2) an instance of when media choice failed to provide the desired effect on well-being, or made you feel worse

The Guily Couch Potatoe – Reinecke et al (2014)

- Although media use can be good for those who have depleted their self-control
- People may appraise their use as procrastination, and then feel guilty
- This could harm the recovery process
- N = 635: gamers and students who had worked and used games or TV on previous day (61.8% males; age M = 25.1, SD = 6.12)
- Survey measures of: state self-control, procrastination, guilty, recovery, vitality and enjoyment

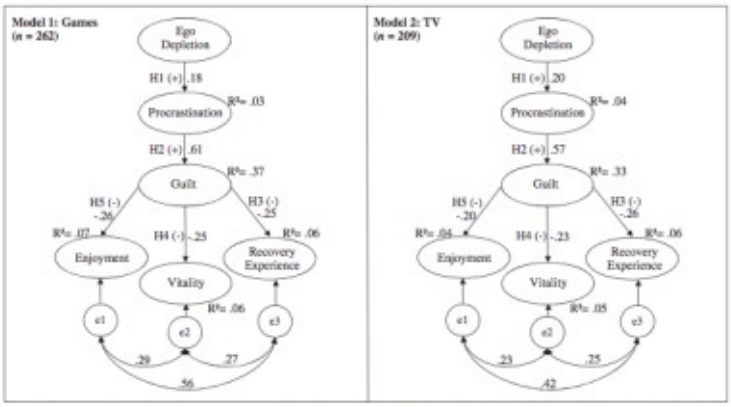


Figure 1 Observed two-group structural equation model with hypotheses labeled, $\chi^2(1104) = 1987.58$, $p < .001$, CMIN/$df = 1.80$, CFI = .910, RMSEA = .041, SRMR = .09. Scores in the figure represent standardized path coefficients significant at $p < .01$.

- Implications:
  - ''Giving in'' to entertainment is negatively evaluated
  - This negative perception can harm recovery, which would have otherwise been aided by entertainment
  - Ego-depleted participants also found to prefer ''easy'' or less-challenging content (hedonic, not eudaimonic)

Bartsch & Oliver (2017) – Appreciation of meaningful entertainment experiences and eudaimonic well-being
Entertainment differs from more goal-oriented forms of media use that are motivated by the exchange of information, arguments or goods and services such as is the case of news, advertising or e-commerce for example. Rather, the goal of entertainment consumption seems to lie in the sense of gratification and well-being associated with the entertainment experience per se.

In the short term, mood-management functions (Zillmann, 1988) can improve subjective well-being. However, in the long term, habitual consumption of violent content may increase aggressive thoughts, feelings and action tendencies, and may decrease empathic responding (Bushman & Huesmann, 2006). In this context, entertainment is often thought as a guilty pleasure, that is, a behaviour with positive short-term effects and negative long-term effects on well-being (Reineke et al, 2014).

Positive effects of entertainment consumption on well-being are not limited to the time frame of direct exposure to the entertainment stimulus. Rather, exposure to poignant and cognitively challenging content is assumed to engage individuals in effortful but effective coping strategies such as deeper reflection, meaning-making, and cognitive reappraisal – which in turn contribute to psychological growth processes with positive long-term effects on emotional stability, meaningfulness and eudaimonic well-being.

The effects of entertainment on well-being are not limited to the well-being of isolated individuals. Rather it seems that in the process of deeper reflection and meaning-making, individuals feel inspired to think and act prosocially.

Research in entertainment psychology has evolved from its earlier focus on hedonic gratification to its more recent acknowledgement of eudaimonic fulfilment. Although eudaimonic appreciation may, in some ways, involve some amount of pain or discomfort, we ultimately believe that this media experience is deeply gratifying. While eudaimonic entertainment has been linked to cognitive and affective challenges in that it broaches painful truths about the hardships and poignancies of the human conditions, it also seems to support processes of meaning-making, dissonance reduction and cognitive reappraisal in that it focuses on immaterial eudaimonic rewards such as deeper insight, social connection and personal growth. The affective experiences that accompany this process of meaning-making can best be described in terms of other-focused feelings with mixed affective valence such as empathy, tenderness, poignancy and elevation. Ultimately, the focus of eudaumonic entertainment on human virtues, values and loving relationships may not only satisfy the need for meaning-making aroused in the process of entertainment consumption – it may also strengthen individuals'' general ability to confront and cope with negative experiences, thus contributing to emotional stability and eudaimonic well-being in the long run. By involving ourselves in media narratives about both our joys and our sorrows, entertainment provides us with the opportunity to grapple with life purpose and to be moved by questions of meaning, and assists us in enhancing our own well-being and the well-being of others.

Reinecke & Eden (2017) – Media use and recreation: media-induced recovery as a link between media exposure and well-being

Reinecke proposes that the way media users appraise their own use of entertaining media is key to our understanding of the effects of media exposure on psychological well-being. Ego-depletion may be an important predictor of such appraisal processes. While exposure to entertaining media has the potential to offer a valuable source of recreation after stress and strain, Reinecke argues that ego-depleted individuals may be particularly prone to engage in negative appraisals of entertaining media use, perceiving it as an unjustified form of procrastination that, in turn, evokes guilt and diminished recovery effects. Including this mechanism may help to better understand the mixed results regarding the use of entertaining media and well-being found in prior research (some found a positive relationship between media use and well-being, some a negative one).

Ego-depletion: a temporary reduction in the self's capacity or willingness to engage in volitional action caused by prior exercise of volition. Ego-depletion results from effortful and exhausting prior self-regulation, such as found in making decisions, adjusting to social norms, avoiding mistakes, and in many other tasks frequently encountered in daily life.

Procrastination: engaging in activities somebody finds pleasant, e.g. Internet surfing, while actively postponing the completion of other (more important or demanding) tasks. While those engaging in procrastination attempt to distract themselves with pleasurable activities, any enjoyment ultimately subsides and is replaced by regret, apprehension, and guilt.

The aim of the study is to extend previous research on entertaining use and psychological well-being by investigating:

- The association of ego-depletion with the negative appraisal of entertaining media use
- The potential implications of this negative appraisal on positive outcomes of entertaining media use such as recovery, vitality, and enjoyment

Ego-depleted participants showed a higher tendency to perceive entertaining media use as a form of procrastination. Furthermore, perceived procrastination was strongly associated with feelings of guilt with regard to entertaining media use. As predicted, the guilt experienced in regard to the use of entertaining media was negatively related to the media-induced recovery experience and vitality in interactive as well as non-

interactive media. The results thus demonstrate that the negative appraisal of the use of entertaining media associated with ego-depletion reduced the positive effects of media exposure on psychological well-being. Lastly, feelings of guilt were also negatively related to the enjoyment of both video games and TV.

Addressing the research question regarding possible differences between different types of media use, the patterns of results did not show any significant variations among the data of participants using video games versus TV.

The present study does not provide an answer to the question under what circumstance ego-depleted individuals do not feel guilty about media use. It appears plausible to assume, for example, that ego-depleted individuals may in fact perceive entertaining media use as a legitimate activity, a deserved reward after a hard working day - but under what circumstances does this happen? In sum, these open questions demonstrate that the search for further variables that explain when and why (ego-depleted) media users feel guilty about their media use is an important task for future research.

SESSION 12 – MORALITY AND MEDIA

Morality: beliefs about what is the rightness or wrongness of behaviour and action
Moral reasoning: ability to articulate reasons for moral decision making
Moral judgement: ability to make ethical choices when presented with a moral dilemma, evaluation of morally right or wrong

Media and morality - Early connections

- Gabriel Tarde (1860s) – mob mentality
- Frances Fenton (1911) – newspapers
- Payne Fund studies (1929-1932) – think of the children!

Bandura & Social Cognitive Theory (SCT) or morality

- Observational learning: morality is learned by watching others
- Rewards/punishments for social behaviour
- Self-regulation is core of moral process
- May result in (moral) attitude change
- But reproduction of rewarded moral behaviour, only in ''matching'' context and if self-efficacy is high enough

Piaget

- Sensorimotor: the child begins to interact with the environment (0-2yr)
- Preoperational: child begins to represent the world symbolically (2-6/7yr)
- Concrete operational: child learns rules such as conservation (7-11/12yr)
- Formal operational: adolescent can transcend the concrete situation and think about the future (12yr-adulthood) → when they start to understand moral reasoning

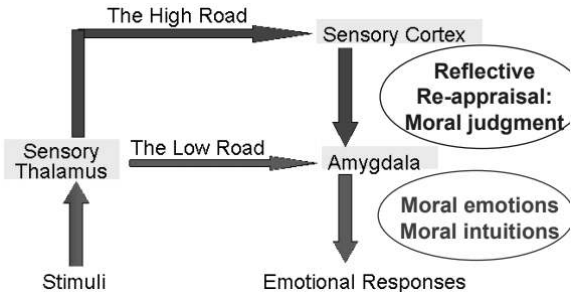
Kohlberg: three stages of moral maturity

1. Pre-conventional
2. Conventional
3. Post-conventional

Rule-based morality (Kohlberg)

Level/stage	Age range	Description
I: Obedience/punishment	Infancy	No difference between doing the right thing and avoiding punishment
I: Self-interest	Pre-school	Interest shifts to rewards rather than punishment – effort is made to secure greatest benefit for oneself
II: Conformity and interpersonal accord	School-age	The ''good boy/girl'' level – effort is made to secure approval and maintain friendly relations with others
II: Authority and social order	School-age	Orientation toward fixed rules – the purpose or morality is maintaining the social order, interpersonal accord is expanded to include the entire society
III: Social contract	Teens	Mutual benefit, reciprocity – moral right and legally right are not always the same – utilitarian rules that make life better for everyone
III: Universal principles	Adulthood	Morality is based on principles that transcend mutual benefit

Parallel processing: high and low pathway (LeDoux, 1996)



Media and morality: challenges

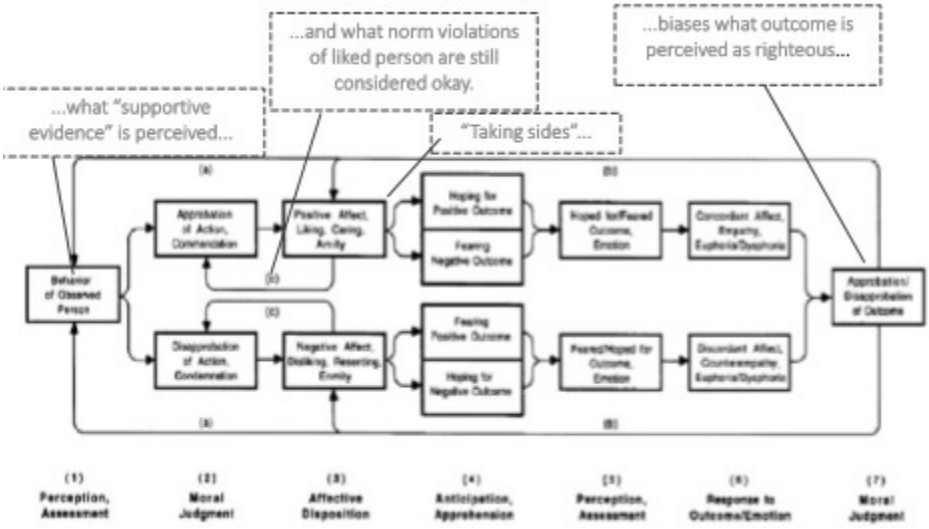
- Media's impact on morality is mostly studied indirectly
- Often based on rational conceptions (bv Kohlberg) which underplay intuition and emotion
- Newer theories take on a less cognitive approach

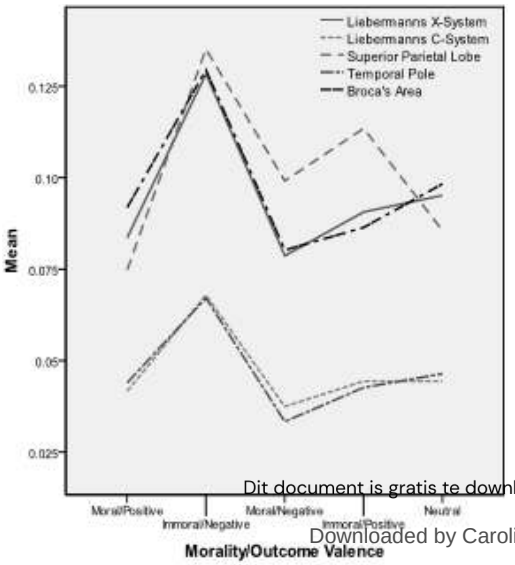
Morality and (narrative) persuasion – two premises

- We are affected most by content that is morally relevant to us
- We can be moved by this content to change our behaviour attitudes

Affective Disposition Theory (ADT, Zillman, 1996)

- We like it when: good things happen to good people and bad things happen to bad people
- We dislike it when: good things happen to bad people and bad things happen to good people

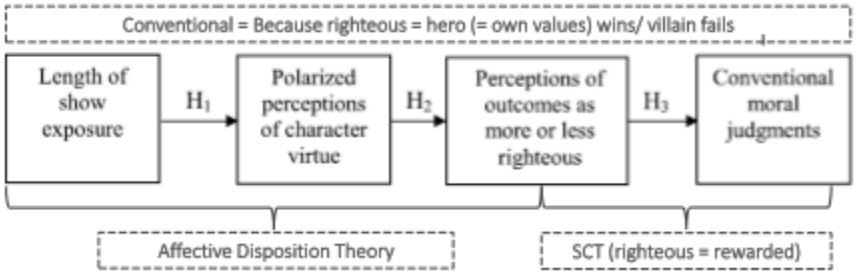




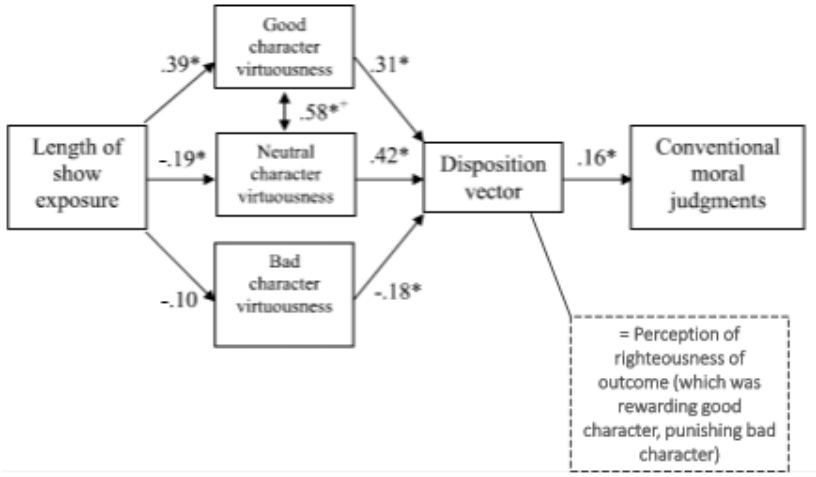
Highest level of synchrony when watching bad people getting punished (Weber et al, 2011)

Tamborini et al (2010): ADT and SCT

- RQ: prolonged soap opera exposure → change in affective dispositions (ADT) and real-world moral judgements (SCT)?
- N = 253 students watched soap (''Days of our lives'')



- Checking moral values about a character by a 7-points Likert schale (1 = very immoral – 7 = very moral)
- Moral dilemma's similar to soap narrative and different from soap narrative measured



Morality theories underlying MIME

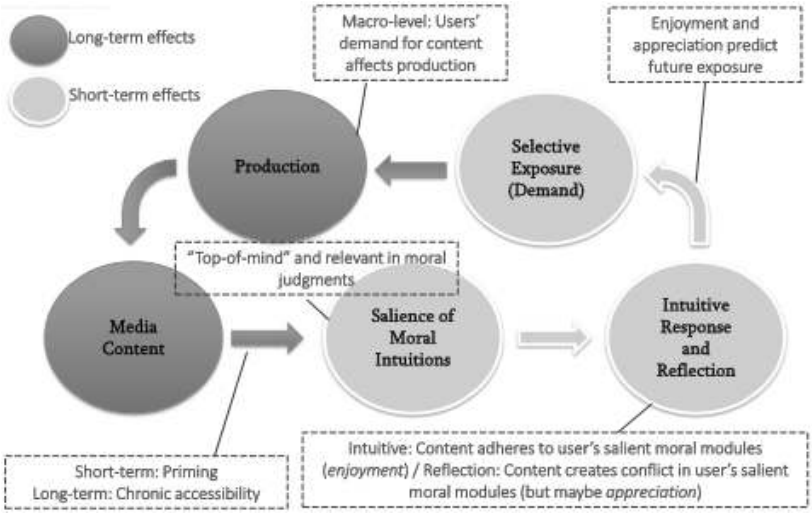
Affective Disposition Theory (ADT)	**Social-Cognitive Theory (SCT)**	**Moral Foundations Theory (MFT)**	**Model of Intuitive Morality and Exemplification (MIME)**
Experience	Effects	Moral institutions	Effects (based on experience)
Enjoyment and biased moral judgements	*Observational learning and imitation*	*Intuitive moral foundations*	*Salience of moral foundations through media use*

Intuitive: Moral Foundations Theory – Graham et al (2012); Haidt (2012)

1. Care/harm (bv attachment, empathy)
2. Fairness/cheating (bv reciprocal altruism)
3. Loyalty/betrayal (bv group cohesion, coalition)
4. Authority/subversion (bv legitimate authority, respect for traditions)
5. Sanctity/purity/degradation (bv psychology of disgust and contamination; religious notions; sexuality)

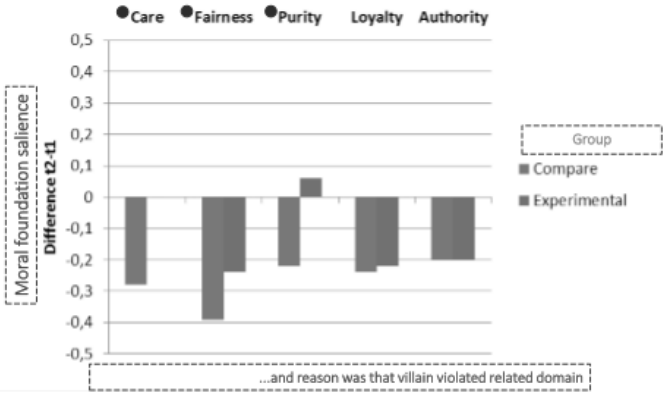
- Moral foundations or modules (innate due to evolution, but revised in ''cultural learning'') → differ in salience, mark ''personally sensitive issues''

Model of Intuitive Morality and Exemplification (MIME) – Tamborini (2012)



MIME and ''Sorority Forever'' Study – Eden et al (2014)

- RQ: long-term effects on chronic accessibility?
- Two student groups, experimental (N=42) vs comparison group (N=159)
- Salience of 5 moral foundations t1, t2 (after 8 weeks of watching online soap opera in exp group) vs not watching (comparison group)
- H: upholding/violation of foundation by central characters increases t2-salience of related foundation in exp group



- Story-consistent belief changes
  - Content affected moral salience: the more people perceived the heroine to violate harm norms, the more salient harm norms were at t2
  - The more people received the villain to violate purity norms, the more salient purity norms were at t2

Some evidence that moral intuitions can be combined with entertainment and emotion models to predict attitudes – Not all similar levels in moral intuitions (morality and emotion, reciprocal process).

Adolescence (11-14yr)

- Important development in brain areas relevant for cognitive skills, influences:
  - Social development → peers

  - Emotional development → turbulences
  - Moral development → experimenting
- Highly popular: antisocial media content
- Pyshical growth → risk taking → emotional development → social change

Study: does peer rejection lead to a stronger preference for anti-social media content

- Hypo: through evoked emotions
- ''Untiring Moral Monitors''
- Proposed causal effects (mediation model)
- 74 adolescents (12-16yr) and 75 young adults (18-27yr)
- In total 15 Youtube clip descriptions, 9 covering asocial/immoral media content and 6 covering neutral/social content
- Adolescents: peer rejection (vs acceptance) → anger → moral judgement (lenient) → a-social media preference
- Young adults: peer rejection (vs acceptance) does not lead to anger/moral judgement → a-social media preference
- Conclusion: unique for adolescents

In sum

- Morality matters a lot in media exposure
- Reflective vs intuitive morality
  - Developmental stages of moral reasoning
  - Interconnectedness of emotions and morality
- Media plays role in moral development
- At least 4 theories that deal with morality and media:
  - ADT: exposure experience
  - SCT: effects (learning and imitation)
  - MIME: experience-effects-exposure links
  - PP (Parallel Processing): emotions bias moral judgement

Zillman (2013) – Moral monitoring and emotionally in responding to fiction, sports and the news
Zillmann presents a disposition model of emotional reactivity to dramatic happenings. The model applies to such reactivity irrespective of the reality status of witnessed social interactions. This is to say that it applies to actual social interactions as well as to interaction that are presented by communication media.

The model emphasizes respondents' continual moral monitoring of others' behaviour, its implications for the formation of dispositions of liking based on approval and disliking based on condemnation, the consequences thereof for wishing versus fearing good fortunes or misfortunes, and ultimately projects emphatic or counter-empathic reactivity. The conditions for the elicitation of joy or spite from witnessing others' good or bad fortunes are then elaborated for the resolution of dramatic episodes and for that of dramatic presentation as a whole.

There can be little doubt that morally defined social dispositions are capable of fostering intense joy when friends are witnessed to attain good fortune but intense sadness when these friends suffer grievances. Inversely, great joy is liberated when evil persons are witnessed to suffer misfortunes and 'due punishment' but intense distress is triggered when they succeed in 'getting away with murder'. In all of this, it does not seem to matter whether persons are directly witnessed, presented in veridical, news-like reports, or featured in fictional formats. Moral monitoring of actual and mediated social environments, with its implications for behavioral dispositions and ultimately for emotional reactivity, thus does bridge the reality-fiction divide.

Counter-empathy/discordant effect: when the emotions of observers are hedonically contrary to those of observed parties.

Why can we so readily suppress what appears to be an evolutionary deep-routed response tendency? The answer may be perplexing.

It is, essentially, that moral assessments enable us to hold off and even hedonically reverse our emphatic inclinations. Such reversal may help us retain a just-world perspective in that societal precepts apply to everyone and exceptions are not to be tolerated. When these perceptions are violated, as by the coercive attainment of valued objects or services, punishment is morally sanctioned and thus may be enjoyed. Our moral interpretations allow us, so to speak, to be malicious with dignity. Additionally, the public exhibition of punishment may be seen as having the utility of reducing the likelihood of similar transgressions by others.

It would seem that social etiquette curtails the indicated hostile expression in immediate interactions. Such curtailment may extend to publicly responding to social and societal happenings related by the news or comparable formats of information conveyance. There are contexts, however, that permit and even invite the open expression of hostile affective reactions. Sports spectatorships is one of these domains. The social consumption of fiction provides a similar freedom. It is, of course, the private consumption of veridical or fictional media fare that removes all restrictions on expressive reactivity (see lecture 12 for figure).

Stage 1 commences with the casual examination or careful scrutiny of observed animated beings. Characteristically, these beings are deliberately acting persons or presentational approximations thereof, such as cartoon figures with human expressive characteristics. Stages 2 and 7 stipulate the involvement of moral evaluations in the formation of affective dispositions toward the observed animated beings. Stage 3 projects the resulting affective dispositions, and stage 4 these dispositions' influence on anticipatory emotions. In stage 4, reactivity divides into the dichotomy of hoping for, versus being fearful of, morally sanctioned outcomes. Stage 6 then specifies the contingent emotional experiences, such as joy and jubilation versus sadness and dejection.

Eden et al (2014) – Repeated exposure to narrative entertainment and the salience of moral intuitions
The notion that exposure to entertainment content can influence moral judgment is a fundamental assumption of much media research. Research in this vein has illustrated that entertainment, particularly viewing television, is related to viewers' moral beliefs and attitudes. In general, this research hinges on the notion that exposure to particular content may shift moral values over time. The predictive utility of this research is limited due to a lack of a non-normative, empirically driven theory of morality.

To address prior shortcomings, Tamborini introduced to model of intuitive morality and exemplars (MIME), which combines developments in moral psychology with media psychology theories to delineate the reciprocal influence between morality and media exposure. The MIME incorporates logical from moral foundations theory (MFT) to understand the manner in which media shape moral judgments by:

- Explicating distinct, a priori defined domains of morality that cut across cultural or societal boundaries
- Identifying the underlying process that shape related social perceptions.

The MIME, as well as the MFT, argues that moral domains are primarily categorized as preconscious automaticity, because they influence moral judgments without conscious deliberation, awareness, or rationalizations about moral justification. At the same time, moral judgments can also be affected through conspicuous media primes of which the audience is fully aware. Thus, moral judgments may be influenced by the extent that exposure to morally relevant content on screen makes moral intuitions more or less salient.

The long-term processes in the MIME extend the work on priming to look at the role of moral exemplars in moral judgment. Despite the MIME's theoretical expectations that repeated exposure should affect chronic

accessibility, the link between repeated exposure to content and the subsequent accessibility of moral intuitions has yet to be tested. MIME research to date has focused on short-term (rather than long-term) exposure to media content. Eden therefore tests the long-term representations in the MIME by examining shifts in the accessibility of moral domains after repeated exposure to narrative entertainment content, namely soap opera, featuring clear moral exemplars in terms of the hero and the villain of the story.

Chronic accessibility: enduring accessibility that results from the potentially non-recent, frequent, and consistent activation of particular constructs.

Our study set out to test the proposition that exposure to entertainment content, particularly heroes and villains portraying domain-relevant behaviour, will make that domain more salient to viewers. Taken as a whole, the findings in the present study offer initial evidence in line with the MIME's depiction of narrative entertainment's long-term influence on moral domain salience.

First, and most importantly, the findings indicate that repeated exposure to domain-specific media content embedded within entertainment programming can influence the salience of moral domains. In doing so, they provide evidence for one of the basic propositions of Tamborini's (2011, 2012) MIME model, which represents the manner in which entertainment media can influence intuitive morality. In this instance, the salience of the care and purity domains remained elevated for subjects in our treatment condition, but not for those in our comparison condition. This finding indicates a systematic influence on the moral domain scores of the treatment group that did not occur in the comparison group. These results suggest that domain-relevant representations in the media content influenced domain salience in the treatment group, as predicted.

Evidence that the induction caused the observed effect is further supported by findings that certain domain-relevant content predicted post-exposure domain salience as well. Specifically, respondent's perceptions that the main villain from the series (Bridget) violated care, fairness, and purity influenced post-exposure salience of care, fairness, and purity respectively. These findings

- Provide support to our argument that entertainment content can influence the salience of these domains over time
- Are consistent with the notion that entertainment media can affect moral intuitions by presenting salient exemplars.

WG4 – VIDEO GAMES DISCUSSION

Prot et al (2012) – Video games: good, bad other?

Key points

- The growing popularity of video games has instigated a debate among parents, researchers, video game producers and policymakers concerning their harmful and helpful effects
- Video games are very effective teachers that affect players in multiple domains
- Some of these effects can be harmful (bv effects of violent video games on aggression)
- Other video game effects can be beneficial (bv effects of action games on visual-spatial skills)
- Video game effects are complex and would be better understood as multiple dimensions rather than a simplistic ''good-bad'' dichotomy

Summary of main research findings on positive and negative effects of video games on players

Positive effects	Negative effects
Action games improve a range of visual-spatial skills	Violent games increase aggressive thoughts, feelings and behaviour
Educational games successfully teach specific knowledge and skills	Violent games desensitize players to violence, decrease empathy and helping
Exergames can improve physical activity levels	Video game play is negatively related to school performance
Prosocial games increase empathy and helping	Video games may exacerbate attention problems
Prosocial games may decrease aggression	It seems that some players can become addicted to video games

Gentile and colleagues have proposed that video games can affect players on at least 5 dimensions:

1. Amount of game play
2. Content of play
3. Context of the game
4. Structure of the game
5. Mechanics of game play

Ferguson & Konijn (2015) – She said/he said: a peaceful debate on video game violence

The present article aims to discuss the media violence debate in a cordial manner between 2 scholars who differ in their views on media violence effects research. Although the media violence debate often seems obfuscated by a ` priori fixed positions that leave little room for nuances, the scholars who discuss their points of view in the current article wish to show that it's possible for 2 scholars with differing views, and different cultural backgrounds (USA vs Europe), to discuss research on both "sides" in respectful ways. In the current dialogue–article, they take turns in asking questions, express concerns, and provide answers to enrich each other's thinking and eventually the body of knowledge. They address topics like the complexity of explaining human behaviour and thus effects of media behaviour, the issue of defining violent games and measuring aggression, media effects as a public health concern, cultural differences in views on sex and violence in the media, moral values as well as their own position as parents observing their teenager's media use. In sharing their thoughts, they enrich the scientific debate on the pertinent issue of media effects and suggest directions for future research.

The complexity of explaining human behaviour and reading evidence

- Konijn: media violence exposure will not be the only cause of aggression; certainly, a number of factors will need to coalesce with media violence to lead to detrimental effects. Still then, it may contribute as a causal factor — in combination with other factors.

- Ferguson: just because we agree violence/aggression is multicausal doesn't mean that media violence has to be one of those causes. For me that's what the debate is about :is media violence one of the causes of violence/aggression in the real world. Not whether is it the only cause.
- Konijn: then we face the problem of determining what evidence counts as convincing evidence that media violence is one of those causes. I do believe that enough studies and meta-analyses showed such an influence. Yet, indeed, often in coalescence with other variables. I also agree with the sceptics that correlations do not show causality (though showing a relationship also has some validity be it not in terms of causality), but carefully controlled experiments do.

The problematic case of defining violent content and measuring aggression

- Ferguson: it seems that we're making a lot of assumptions about a wide range of games occupying a single, collective, conceptual space.
- Konijn: as with many issues and objects in the social and psychological arena, implied meanings may change when time passes by. Researchers should always clarify how they define and operationalize the theoretical concepts under study, even if scholars don't agree, or rather, in particular if they don't agree on a single definition.

Media effects and public health

- Konijn: in studying media processing and possible effects, it all depends on the type of content one is repeatedly exposed to in concordance with many other factors. It all depends on individual processing of media content, which might be driven by one's motivations for media use, but not necessarily. Therefore, yes, indeed, we should switch from hypodermic-needle theories to individual processing theories. Violent video games are broadly aired via a public health agenda in the USA, while in Europe, specifically in the Netherlands, the general attitude is quite lenient toward violent gameplay, and it's mostly aired as kind of "just a game" and "common boys-toys". We don't have it as a public health agenda other than the PEGI-age and content ratings. So, this may also explain that you stress the one-sidedness of information into one direction (countering violent video games as dangerous in the US), while I'm inclined to stress the one-sidedness into the other direction (countering violent video games as just a harmless boy-toy in the Dutch cultural context).

Cultural differences in views on violence and sex in the media

- Ferguson: there's no cultural tradition to restrict violent media (as opposed to pornography) and lacking a compelling reason to change that.

Parenting children's media lives

- Konijn: cultural differences seem to play a role here as well and perhaps also, as we discussed before, that some parents may feel the need to "show how modern and free" they are by not restricting their kids' media use. , I can see media has an influence on "us," children and adolescents in particular. However, I also believe that we are just at the beginnings of unravelling how media precisely has influence—media research still "stands in children's shoes" — a Dutch saying for "is still in its infancy." And, we, media scholars have to figure out how to best study and how to unravel the complexities and underlying mechanisms in the big puzzle.

EXAMPLES EXAM QUESTIONS

Lecture 1 (Introduction) discussed two types of effects with third, or "M," variables.
In moderation effects, the influence of X on Y depends on the value of M.
In mediated effects, the influence of X on Y is transmitted through M.
Which of the following would be a mediation effect?

- **A. Watching a dog video produces positive emotion, which leads to more prosocial behaviour.**
- B. Watching a dog video produces positive emotion, but only for introverted people.
- C. Watching a dog video produces a mix of positive and negative emotion.
- D. Watching a dog video produces positive and negative emotions, which are stronger for neurotic people.

Lecture 1 (Introduction) discussed two types of effects with third, or "M," variables. In mediated effects, the influence of X on Y is transmitted through M. In moderation effects, the influence of X on Y depends on the value of M. Which of the following would be a moderation effect?

- A. Watching cat videos improves positive emotion, because they distract people from stressful thoughts
- B. Watching cat videos improves positive emotion, since they are perceived a positively valenced messages
- **C. Watching cat videos improves positive emotion, and this effect is stronger for younger people**
- D. Watching cat videos improves positive emotion, because they make people feel connected to nature

Lecture 2 (Learning), the limited capacity model of motivated mediated message processing (LC4MP; Lang, 2011) posits there are two motivational systems: the appetitive and the aversive system. Which of the following statements is/are true:
I: At low levels of activation, that is, in a neutral environment, the aversive system is thought to be more active than the appetitive system.
II: the appetitive system is theorized to activate more quickly than the aversive system

- A. both I and II are true
- **B. both I and II are false**
- C. I is true, II is false
- D. I is false, II is true

From Lecture 2 (Learning from media), there are four mechanisms by which we learn behaviours from others. If you want to copy a complex dance move from the internet, but have no skill at dancing, which of the four mechanisms will fail?

- A. Attention
- B. Retention
- **C. Motor reproduction**
- D. Motivation to reproduce behaviour

In its later form, Social Learning Theory emerged as SocioCognitive Theory (Bandura, 2001; Lecture 2, Learning). This theory attempts to explain what governs human behaviour, especially as it applies to learning. The theory states that learning is governed by 3 bi-directionally linked systems. These systems are known as:

- A. Personality, social groups and media
- B. Family background, media and self
- C. Environment, personality and media system
- **D. Personal, behavioural and environmental determinants**

In lecture 3 (choices and consequences), we defined selective exposure as a "systematic bias" in which messages people accept and avoid. Which of the following examples would be best described as selective exposure?

A. A news website has a political slant, and tends to publish news articles that lean toward its ideology.
B. A video game player needs longer and longer gameplay sessions to enjoy the experience.
C. A supporter of Feyenoord Rotterdam only watches Ajax games on television if Ajax are likely to lose.
D. A student opens their social media newsfeed and reads all over the posts that have appeared in the last 3 hours.

The political party D66 recently proposed to ban certain types of motorized scooters in Amsterdam. Imagine that over the next several months, people who support a ban mostly stick to reading and viewing news stories and thoughtful commentary about why scooters should be banned. And, people who oppose a ban mostly stick to reading and viewing news stories and thoughtful commentary about why the ban is a bad idea. By the time the policy is considered by the city in 2017, but sides have become even more strong in their beliefs, and will not compromise. Confirmation bias in selective exposure has led to what effect?
Effect of polarization

Imagine you want to go watch a movie on Netflix tonight. They show 5 movies you could watch. You have heard about 4 of them. You eventually pick the one that you recognized most quickly. On which heuristic do you rely? (as discussed in Lecture 4 on "media choice" and in the obligatory reading by Marewski et al, 2009)

A. Pick-the-best heuristic
B. Recognition heuristic
C. Fluency heuristic
D. Representative heuristic

From lecture 5, according to Ferguson et al (2011), the more valid approach for measuring pathological gaming is to…

A. Apply the pathological gambling model
B. Apply the competitive gaming model
C. Focus on the interfering nature of gaming behaviour
D. Focus on the engaging nature of gaming behaviour

From lecture 6 (Media, mind, and brain), we can measure responses to media in several different ways. If you would like to test, whether a person pays attention to specific elements media content, which of the following methods would be most appropriate to check it?

A. Facial EMG
B. GSR
C. Eye-tracker
D. fMRI

From Lecture 6 (Media, Mind, and Brain), media neuroscience applies the "Brain as Predictor" approach in order to:

A. Predict psychological processes based on brain mechanisms
B. Predict real-world outcomes based on neural processes
C. Predict brain mechanisms based on psychological processes
D. Predict brain mechanisms based on outcomes outside the neuroimaging lab

Why are emotions omnipresent in media?

A. To attract attention and raise curiosity
B. To connect to basic needs
C. Media are designed to influence emotions
D. All three options apply

Early cultivation theory (Realism, Lecture 8) assumed that television exposure influenced perceptions, but this research did not measure:

A. The content of television that viewers consumed
B. Audiences consumption of other media, such as newspapers
C. The role interpretation plays in perceptions of reality
D. None of the above were measured in early cultivation research

From the session 9 (Media violence effects), Bandura's Bobo Doll study (1961) has been criticized because experiment's observations may not reflect aggressive behaviour. According to definition of aggression, we can consider one's behaviour as aggressive when:

A. One accidentally causes a damage
B. One intentionally harms another person
C. One competes with another person
D. One thinks that it is normal to punch somebody

From the Lecture 9 (Media violence effects), research on effects of violent video games has few problematic issues, for example publication bias. How this problem could be solved?

A. By publishing only significant study results, e.g. Konijn et al. (2007)
B. By publishing only non-significant study results, e.g. Ferguson et al. (2015)
C. By publishing both significant and non-significant study results
D. By publishing only results that confirm hypotheses

Imagine a company aims to replace face-to-face visits with teleconferencing. Of greatest importance is to implement the best technological solution. Of second importance it is to minimize costs, and accordingly to buy the cheapest solution. Imagine the company is basing its decision solely on the significant results observed in the obligatory reading by Bente et al. (2008) on "Increasing Social Presence and Interpersonal Trust in Net-Based Collaborations" (who compared four types of teleconferencing: text, audio, video, and avatars). Which of the following devices would the company buy?

A. Two PCs offering text-based collaborations [1000 EUR].
B. Two phones offering audio-based collaborations [1500 EUR].
C. Two devices showing the real-time camera picture of the other [2000 EUR].
D. Two PCs and tracking devices allowing for avatar-based collaborations [2500 EUR].

From the Lecture 11 (well-being) and the chapter by Bartsch & Oliver (2017), which of the following experiences is NOT typical of media use that produces eudaimonic experiences?

A. Challenge
B. Personal growth
C. Appreciation of values
D. Psychological detachment

According to the lecture on media and well-being (Lecture 11), which of the following statements best describes life satisfaction?

- **A. Each person has different domains of life that are more or less important to them**
- B. It is a lifelong, stable trait
- C. The individual's perception of themselves is less important than their objective success
- D. It consists of autonomy, competence and relatedness

In lecture 12 "morality" in the soap opera study by Tamborini et al. (2010) looking at moral judgment over 8 weeks in a soap opera, the findings support the notion that…

- **A. Viewing characters, their behaviours, and the subsequent rewards and punishments can, over time, shirt moral judgements in a conservative direction**
- B. Simply knowing who the characters are in a soap opera can affect moral judgements
- C. Moral judgements trends towards liberal morality with prolonged soap opera exposure
- D. People in Kohlberg's 1st stage of moral development do no shirt their morals in response to television