The addictive properties of MMORPG, the example of World of Warcraft

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What is World of Warcraft

❑ Massive Multiplayer Online Role Playing Game

❑ The players control avatars (warrior, wizards, priests…) and progress through quests "kill X monsters" or " bring Y objects" to gain levels (about 100 hours of play to level 80)

Importance of WoW

1. China 1'330'000'000

2. India 1'173'000'000

...

75. Azeroth 11'000'000
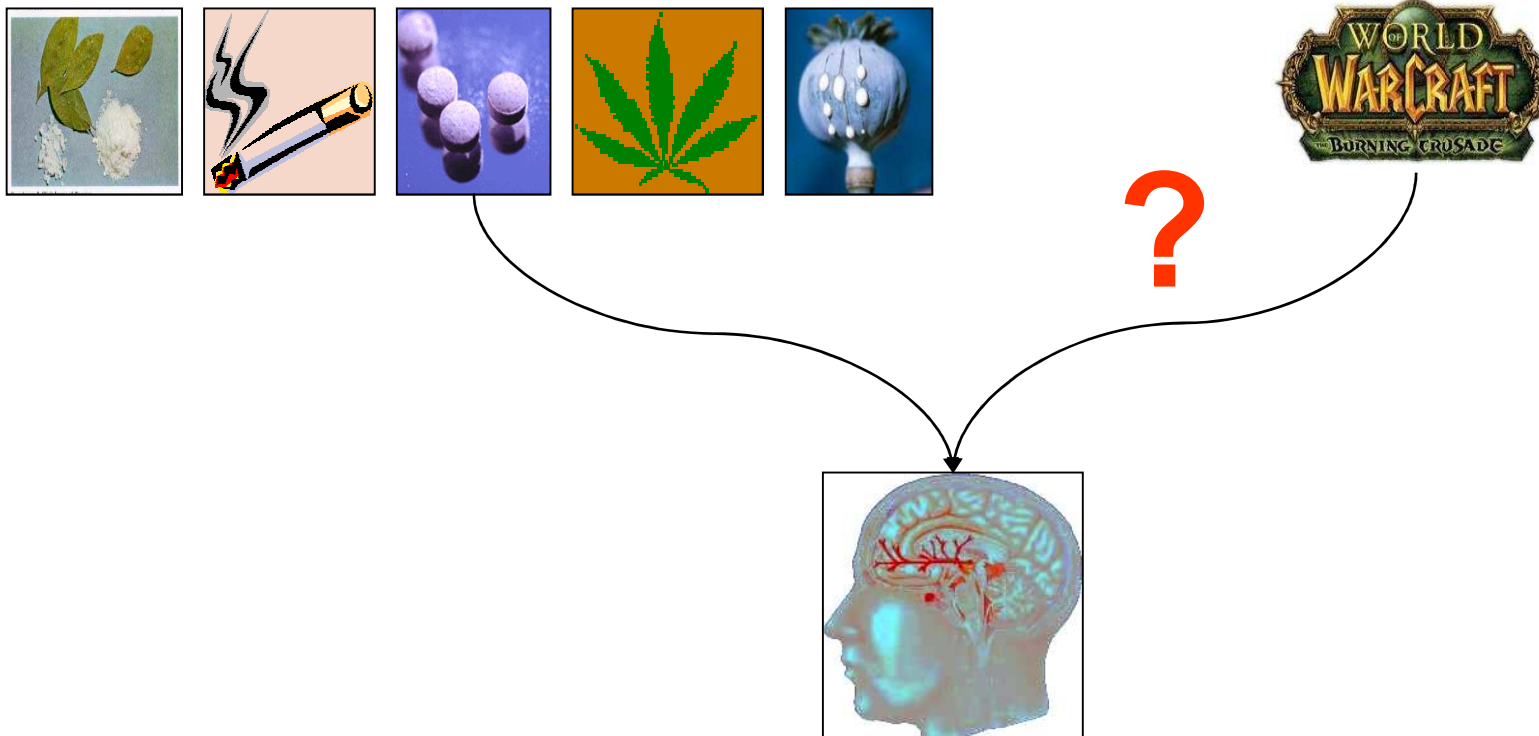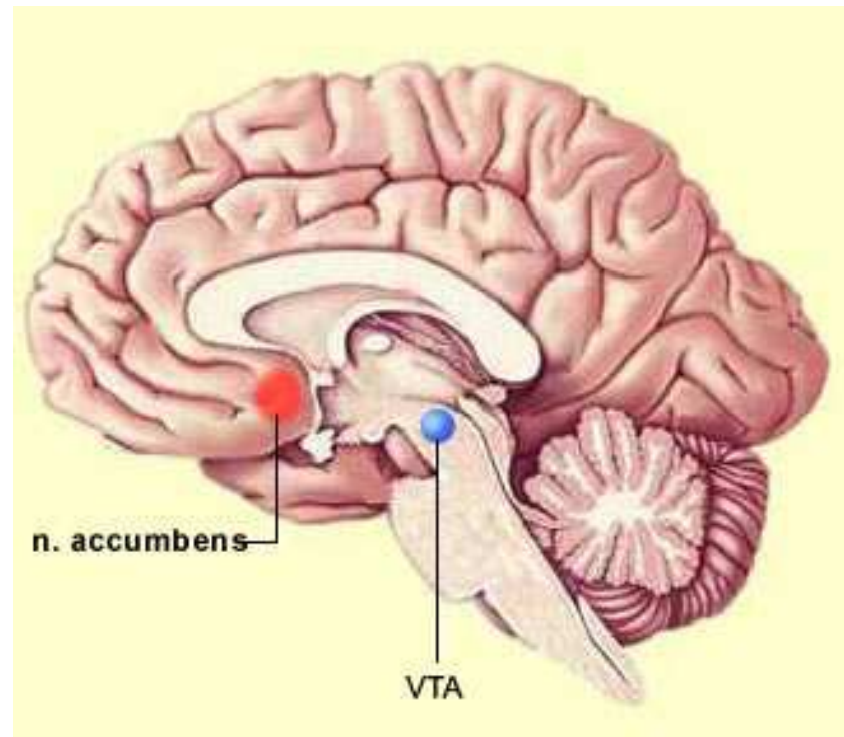
76. Greece 10'730'000

...

189. Monaco 32'000
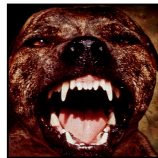
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Addictive properties of MMORPG

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Behavioral addiction theory

Volkov 2004, Baldwin 2002

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Salience

❑ Property of a stimulus that is unexpected as well as arousing and elicits an attentional–behavioral switch

Event with salience

Zink 2006, Ljunberg 1992

❑ Novelty

❑ Primary and conditioned reward properties

❑ Primary and conditioned aversive properties

❑ Physical characteristics such as high intensity and fast rise-time

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Rewards

❑ **Primary rewards**

1. Food delivery

2. sexual stimuli

❑ **Secondary rewards**

1. Monetary incentive

Horwitz 2000

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Secondary reward

❑Cooperation

❑Fairness

❑Human social hierarchies

❑humor

Festinger's theory of social comparison processes:

More attractive cars elicited stronger activations in ventral striatum

Erk and col. 2002

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Festinger's theory of social comparison processes:

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Social comparisons

Zink 2008

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Humor

Mobbs 2003

Haris Pilton sells the biggest and most expensive bag of the game

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Intermittent (or partial) reinforcement

❑ Fixed-ratio schedules

❑ Variable-ratio schedules

❑ Fixed-interval schedules

❑ Variable-interval schedules
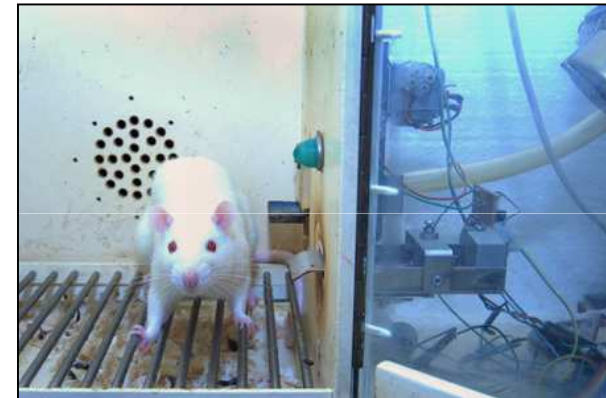
Variable ratio schedules

Occur when a response is reinforced after an unpredictable number of responses.

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0.03% Epic item   3% gold coins   20% silver coins

0.03% Jackpot   3% 5x your bet   20% 1x your bet

Fixed-interval schedules

first response is rewarded only after a specified fixed amount of time has elapsed
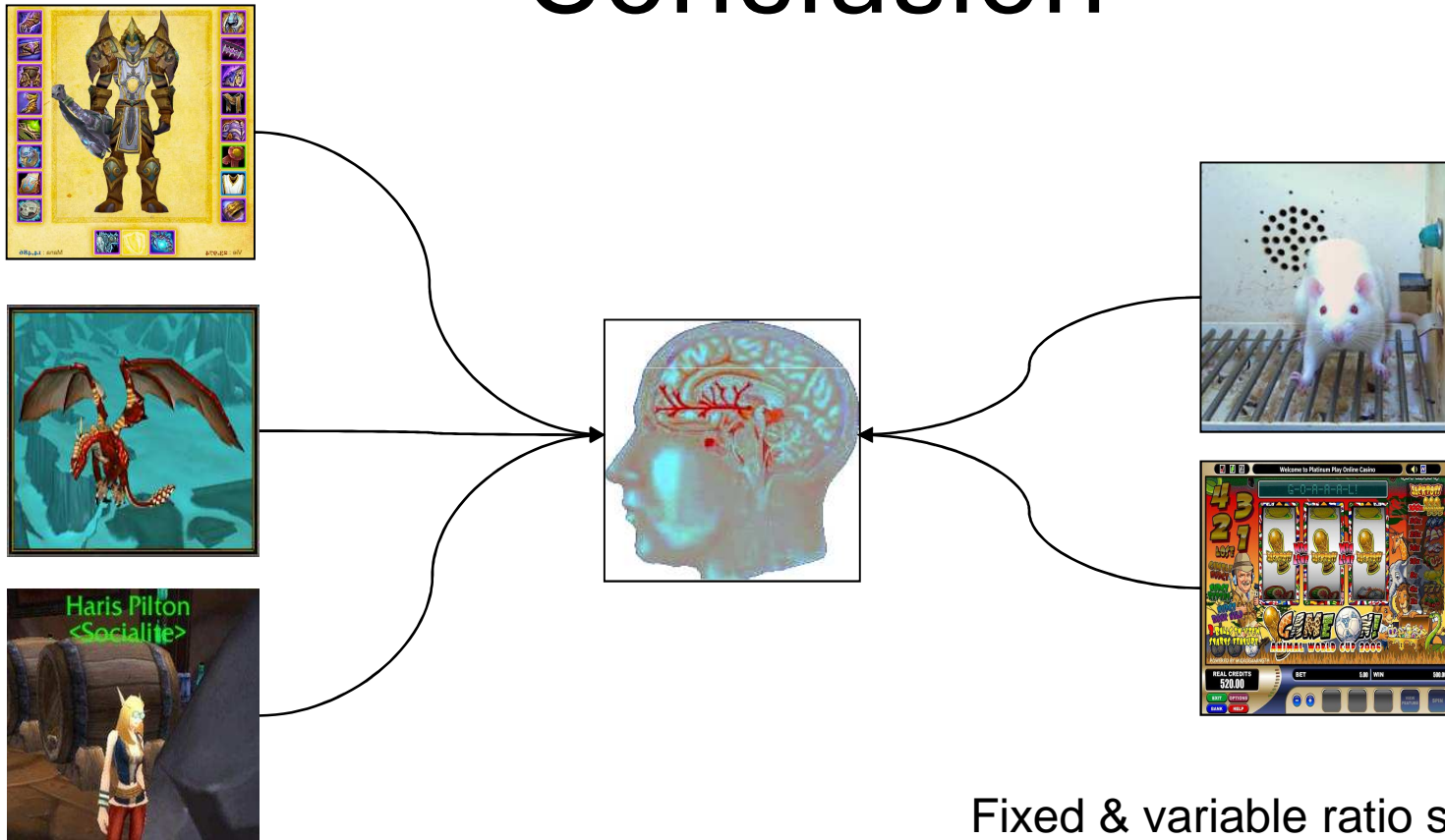
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WoW Alchemists ability to transform lead in gold

24H

Conclusion

Secondary rewards

Fixed & variable ratio shedules

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The 2010 ISAM/CSAM Annual Conference

What is addictive in internet ?
Thorens G, Wullschleger A, Arigo S, Khan R, Zullino D
(in review)

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