

Arrrgghh!!!

Blending Quantitative and Qualitative User Research Methods to Detect Player Frustration

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EXPO DATES: MARCH 7-9

2012

User research

Interviews

Field work

Surveys

Heuristics

Observation

Biometrics

Usability test

Gameplay metrics

Participatory design

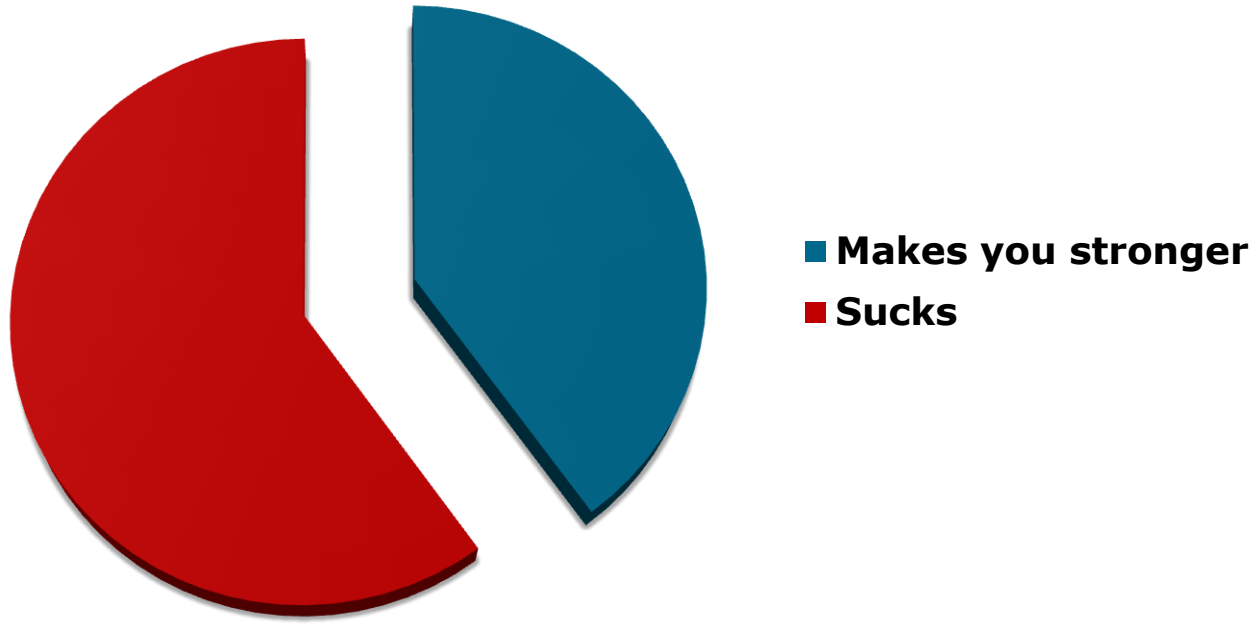
Frustration

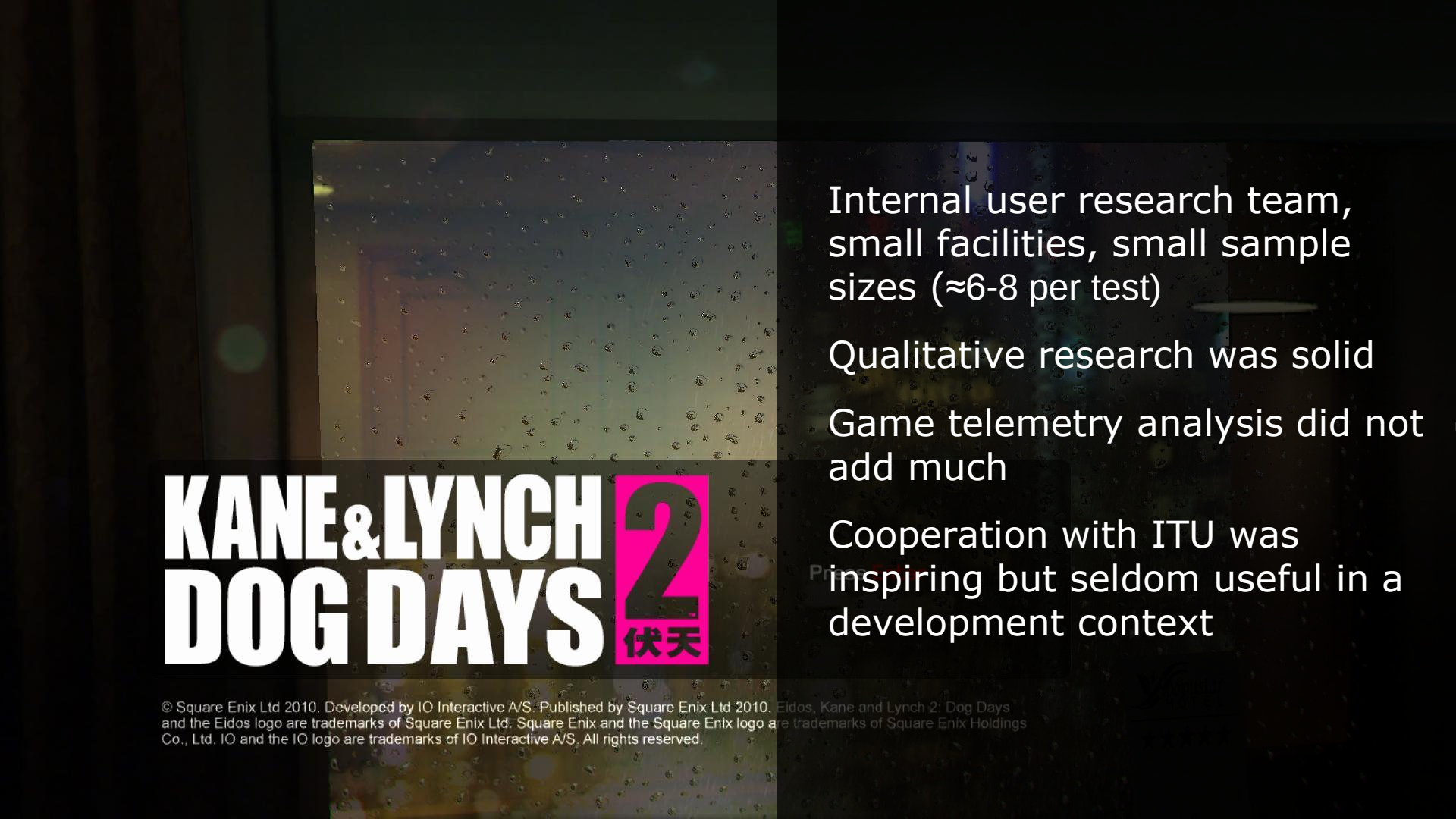
An emotional state that arises as a response to a perceived opposition towards the achievement of a goal

Frustrations are part of
an enjoyable life

... but not all frustration
is enjoyable

What doesn't kill you





KANE & LYNCH DOG DAYS 2

伏天

Internal user research team,
small facilities, small sample
sizes ($\approx 6-8$ per test)

Qualitative research was solid

Game telemetry analysis did not
add much

Cooperation with ITU was
inspiring but seldom useful in a
development context

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**One day
in a random
play session**

KANE & LYNCH DOG DAYS 2 伏天

Died repeatedly

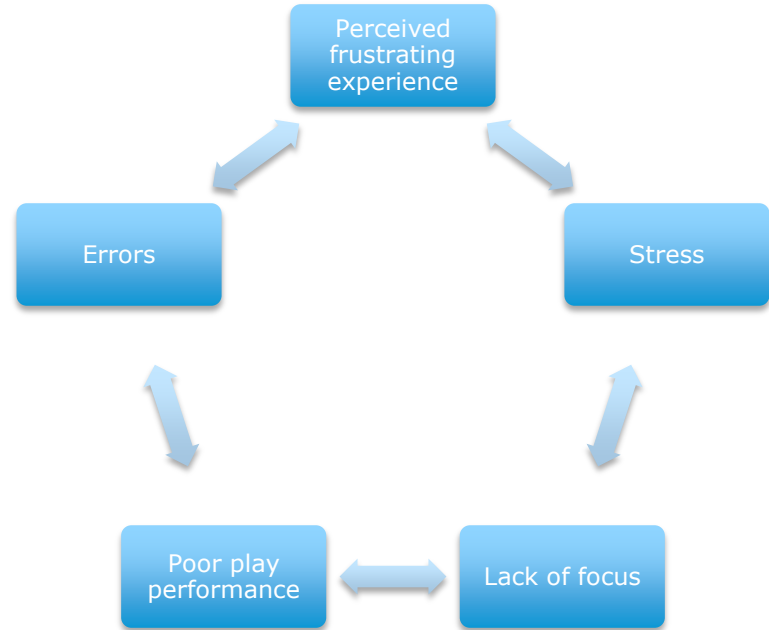
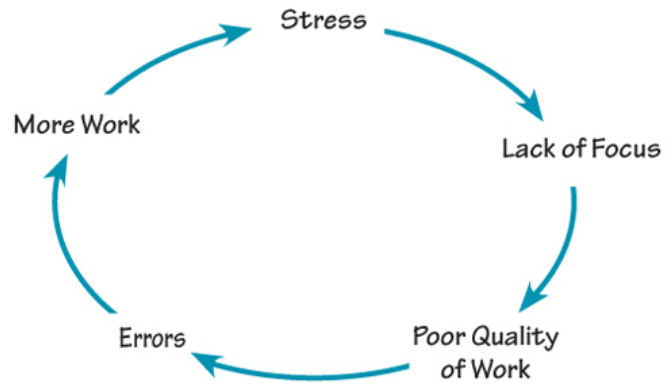
Increasingly rushed forward

Paid less and less attention
to his surroundings

Finally, the player took his
time to figure out a way
through using a workaround,
but he was not satisfied

Press **Enter**

**General frustration pattern
from everyday life**



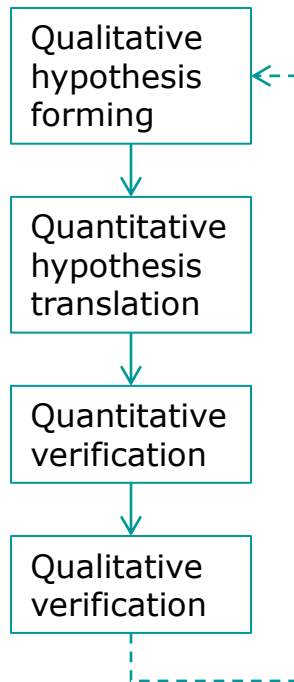
The approach

Qualitative observations of participant
(observation and video analysis)

Identification of quantitative markers
correlated to behavior (metrics analysis and
mathematical model formulation)

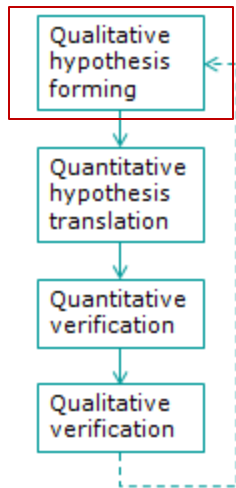
Detection of specific quantitative markers in
other players (SQL query)

Qualitative verification (interviews)

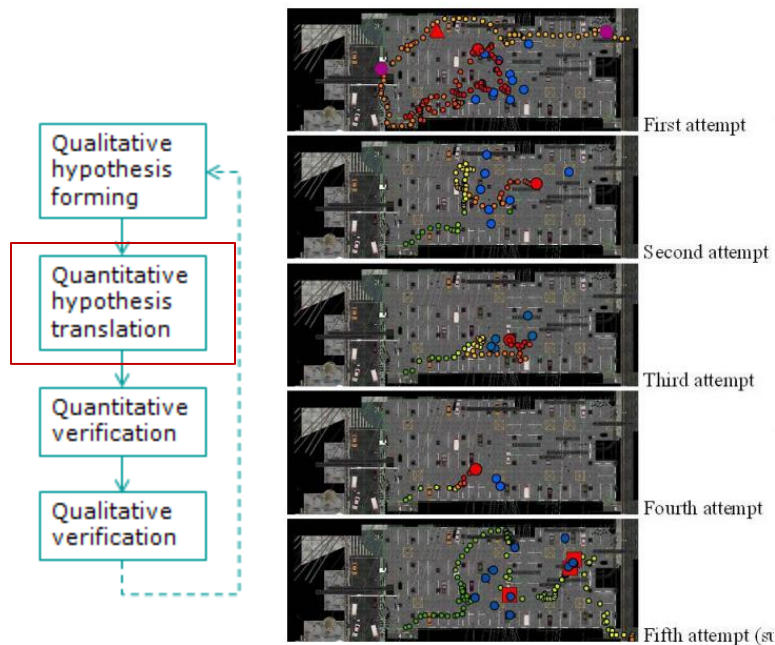


Analysis of recorded session video

Further analysis of the playsession session
(video/capture) to refine the symptoms of frustration

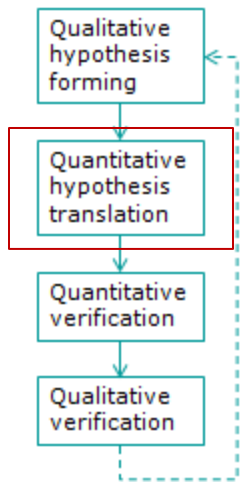


Gameplay metrics analysis



- ❑ The player dies in the same location several consecutive times in a short span.
- ❑ The number of enemies killed decreases considerably in each playthrough.
- ❑ The pace of movement of the player becomes considerably faster in each playthrough, and the same route is repeated with little or no variation.
- ❑ Lacking the presence of special events such as triggering environment explosions or picking up weapons dropped by enemies.
- ❑ Higher coincidence of camera vector (where is the player looking at) with character vector (in which direction is the player moving).

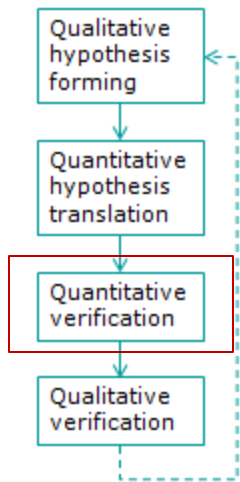
The model


$$t_n < t_f < t_{n+1}$$
$$P_d \geq 2$$
$$0 < P_{dI} < 20$$
$$P_{mf} > P_m$$
$$NPC_d(t_{fn} + 1) < NPC_d(t_{fn})$$
$$W_{apu}(t_{fn} + 1) < W_{apu}(t_{fn})$$

**All conditions
need to apply**

- **Timestamp (t).** The timestamp is set to zero the moment a new playsession begins. $\langle t_f \rangle$ describes a time interval that has been identified as "frustrated"
- **Number of player's deaths (Pd),** $\langle P_{dI} \rangle$ expresses the distance between player deaths in world units
- **Player's pace of movement (Pm)** measured as distance in space travelled in one second, averaged for the whole playsession. $\langle P_{mf} \rangle$ defines the average pace of player movement during an interval of time identified as "frustrated"
- **Number of NPCs killed (NPCd)**
- **Number of weapons or ammo picked up (Wapu)**

Experimentation



- Game metrics data from 22 randomly selected players was analyzed, looking for the pattern that was individuated as potentially causing frustration. (SQL query)
- Identification of behaviors, similar to the one observed previously, in six cases; on different levels of the game

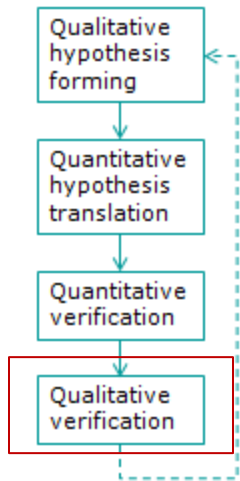
Follow-up interviews

Follow-up interviews

- 22 sampled players
- Open-ended interviews
- Retrospective think-aloud (video recordings/metrics replay)

Results

- The same six players whose patterns of behavior were found to carry the markers of frustration identified earlier confirmed that they felt frustrated at those times during their play sessions.
- None of the remaining 16 players felt frustrated



Conclusions

- ! The model presented is tied to KL2
 - ! Frustration can be manifested in behavior in many ways
 - ! May depend on type of personality
 - ! Not about magnitude of frustration
 - ! Doesn't tell you why
 - ! Does not make researchers obsolete
 - ! Doesn't mean that vicious cycles should be avoided, just managed
- + Promising model to detect unwanted frustration
 - + Successful interface between industry and academia
 - + Easy re-insertion into practice
 - + Successful interface between quantitative and qualitative methodologies
 - + Useful with small sample sizes before release
 - + Systems theory can be used on both individuals and the social

Acknowledgements

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