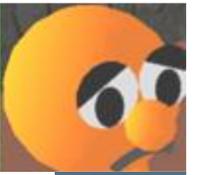




# NPC memory affecting emotional reactions and path planning



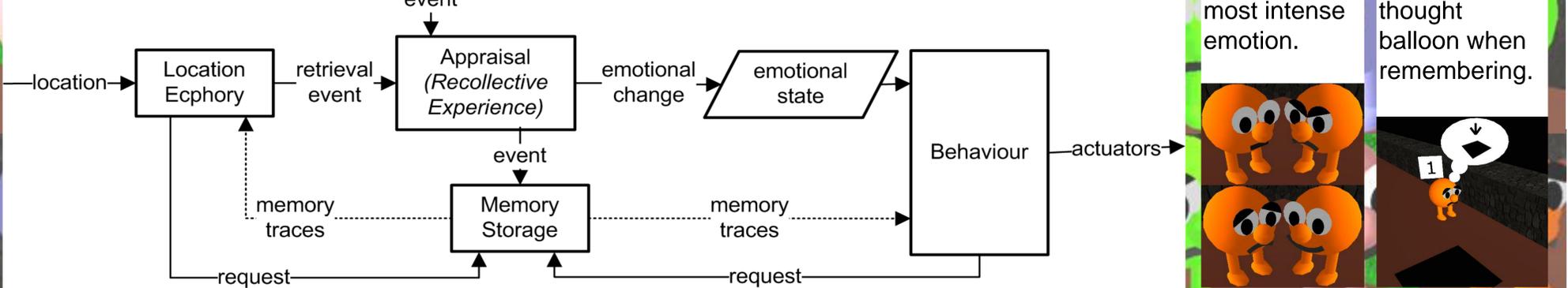
Paulo F. Gomes, Carlos Martinho and Ana Paiva  
{paulo.f.gomes, carlos.martinho, ana.s.paiva}@ist.utl.pt  
Instituto Superior Técnico and INESC-ID



## Problem

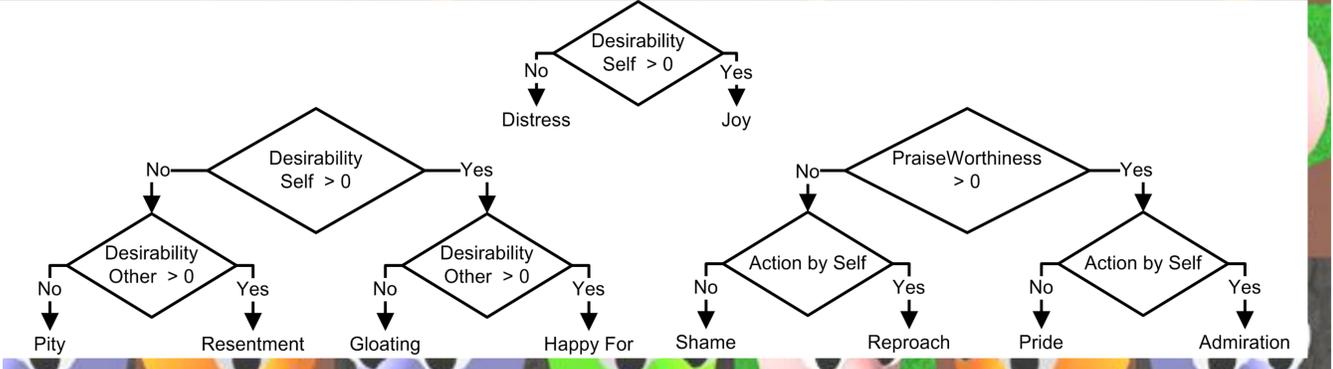
- In games with an **open world level design**, and certain **RPGs**, the player's avatar can **revisit locations** where relevant events have occurred.
- If the avatar has, one or more, **ally characters** by its side, they will in many cases express an **emotional reaction** to the original events.
- However, when returning to the mentioned locations, seldom will these characters express **recollection of the events**.
- To them, it is **just another empty room**, or another type of empty place, while for the player it is not.
- This is inconsistent with the idea that **believable characters should change with experience** [3].

## Architecture



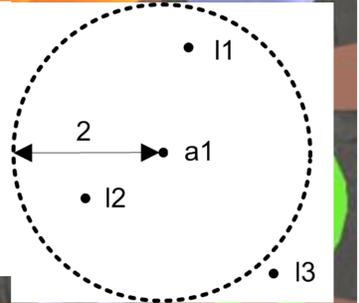
## Appraisal (Recollective Experience)

- Adapted from FATiMA's reactive appraisal [1].
- Event types are mapped to appraisal feature values: desirability for self, desirability for other and praiseworthiness.
- Appraisal feature values are mapped to emotion types.
- The emotion's potential must be above emotion thresholds.
- **Past events are reappraised when retrieved.**
- The intensity of emotions caused by past events is less than normal ones.
- Emotional State: active emotions and mood.
- Mood is increased by positive emotions and decreased by negative emotions.
- Low mood decreases characters' skin saturation
- Further details in [2]



## Location Ecpory

- memory selection for retrieval
- the character is in a certain radius (authored value) of the past event's coordinates.
- some time (authored value) has elapsed since the event occurred or was remembered.



## Path Planning

- Grid A\* with memory influenced weights:
- locations in which emotionally negative charged events have occurred – increased cost.
- favors paths where positively charged events have occur – decreased cost (never negative).

5	5	5	5	5	5	5	5	0	0	0	0	0	0
5	5	5	5	5	5	5	5	5	5	5	5	5	5
5	5	5	5	5	5	5	5	5269	5	5	5	5	0
5	5	5	5	5	5	5	5	5209	5	5	5	5	0
5	0	0	0	0	0	5	5	5	5	5	5	0	0
5	0	0	0	0	0	5	5	5	5	5	0	0	0
5	5	5	0	0	5	5	5	5	5	5	0	0	0
5	5	5	5	5	5	5	5	5	5	0	0	0	0

## Conclusions

- Designed and developed AI architecture supporting emotional memories connected to locations.
- The architecture enables behaviour change according to experience through emotional expression and path planning.

## References

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## Acknowledgments

This work is partially supported by the European Community (EC) and is currently funded by the EU FP7 ICT-215554 project LIREC (Living with Robots and IntEractive Companions), and FCT (INESC-ID multiannual funding) through the PIDDAC Program funds. The authors are solely responsible for the content of this publication. It does not represent the opinion of the EC, and the EC is not responsible for any use that might be made of data appearing therein.

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