Testing the Preparatory Valence of Counterfactual Thinking

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Counterfactual thinking

Mental simulation of how past events could have been different

Why do people produce counterfactuals (CFTs)?

Functional Theory (FT) [1]

CFTs produced mainly to prepare us for the future

How?
Two ways

Content neutral
Thinking that things could have been better have motivational effect leading to increased effort

Content specific
Action considered in CFTs implemented during future performances

CFTs about personally implementable actions (**controllable CFTs**) considered more preparatory than ones about elements outside our control (**uncontrollable CFTs**)

FT makes three main predictions (see below)

FT's predictions questioned in recent years

However, tasks used in studies questioning FT might have been inadequate to test preparatory function

Aim of present study
Further explore FT's predictions using new task to assess preparatory valence of CFTs

New task
Target-shooting video game (12 shots, 30 sec per shot)
+
CFT production
After game, complete "My score would have been higher, if only…"

FT's prediction 1
After negative events, people produce more controllable than uncontrollable CFTs

But, variability in the type of CFTs produced by participants [e.g., 2-5]

Unclear factors driving observed variability

Aim of Exp 1-2
Test two possible factors

FT's prediction 2
Producing CFTs fosters performance improvement by content-neutral effect

FT's prediction 3
Implementation of behaviour imagined in controllable CFTs by content-specific effect

But, mixed evidence about both predictions [e.g., 6-7]

Aim of Exp 3
Further test predictions 2-3

Exp 1
Task difficulty
Higher task difficulty → More uncontrollable CFTs

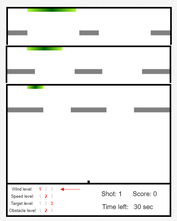
Exp 2
Feedback
Receiving negative feedback → More uncontrollable CFTs

Exp 3 – Prediction 2
Producing (vs not) CFTs about performance in first game lead to higher scores in second game

Exp 3 – Prediction 3
CFTs about not rushing shots (63% of controllable CFTs in Exp 1-2) lead to increased shooting time in second game

METHODS

Easy (*n* = 87)
Intermediate (*n* = 100)
Difficult (*n* = 95)



Three difficulty conditions:
Task difficulty manipulated through game variables (e.g., size of the obstacles)

METHODS

Two feedback conditions:
Manipulated whether participants received feedback informing them they had performed worse than other players

Feedback Absent (*n = 175*)
Feedback Present (*n = 217*)

METHODS

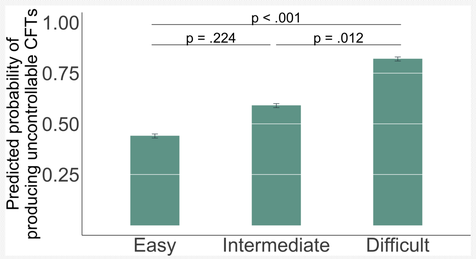
Participants **played** the game **twice**

Two counterfactual conditions:
Manipulated whether participants had to produce a CFT between the games

No CFT (*n = 168*)
CFT
- *Controllable (n = 133)*
- *Uncontrollable (n = 192)*

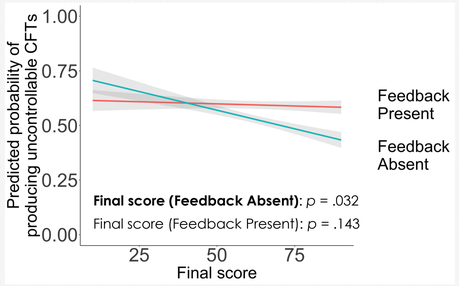
To test prediction 3, measured **time taken to fire each shot** by participants in game 1 and 2

RESULTS



Task difficulty affects type of CFTs produced
+
More uncontrollable CFTs after poor performance

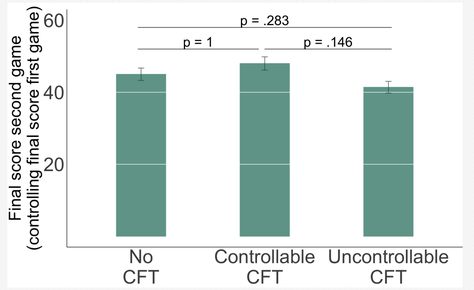
RESULTS



Negative feedback slightly affects type of CFTs produced, when performance is good

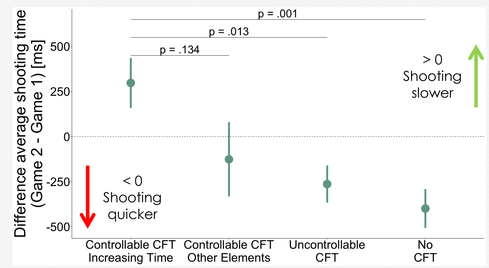
RESULTS

Prediction 2



Simply producing CFTs does not result in higher performance improvement

Prediction 3



Participants producing CFT about not rushing their shots were the only group increasing shooting time in second game

Take-home message

Dominant view holds that CFTs have a preparatory function, but this hypothesis is unable to account for a number of empirical results and needs to be revised

Playable version of the game
Works only on computers
Copy the link and open it on a computer

Copy of the poster

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References

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