Some Thoughts on Games in Education

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Formal Definition of **Game** (Salen & Zimmerman)

"A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome."
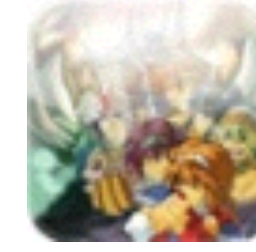
Salen, K. and E. Zimmerman. *Rules of Play : Game Design Fundamentals*. The MIT Press. (2003)

Narrative

IF   Graphic Adv.   Action/Adv.   RPGs   MMOGs   ARGs

Other   Board   Traditional   Puzzle

Simulation   Sims   RTS   Mil. TBS   Wld. TBS

Narrative

Other

Simulation

Action

Shmups   Platformers   FPS   Fighting   Sports   Vehicle   Rhythm
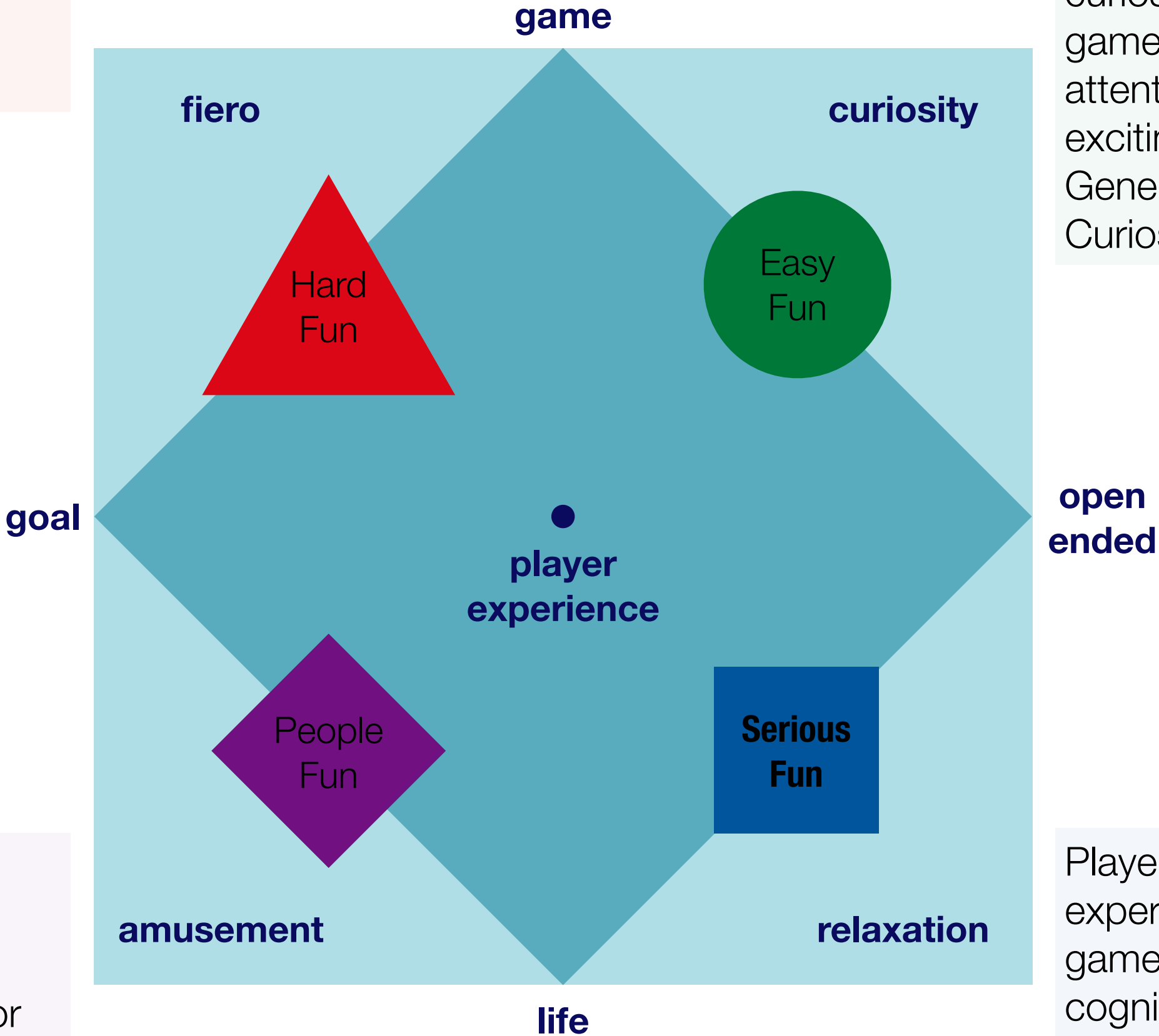
Action

Puentedura, R.R. *The Educator's Game Machine*. (2010)
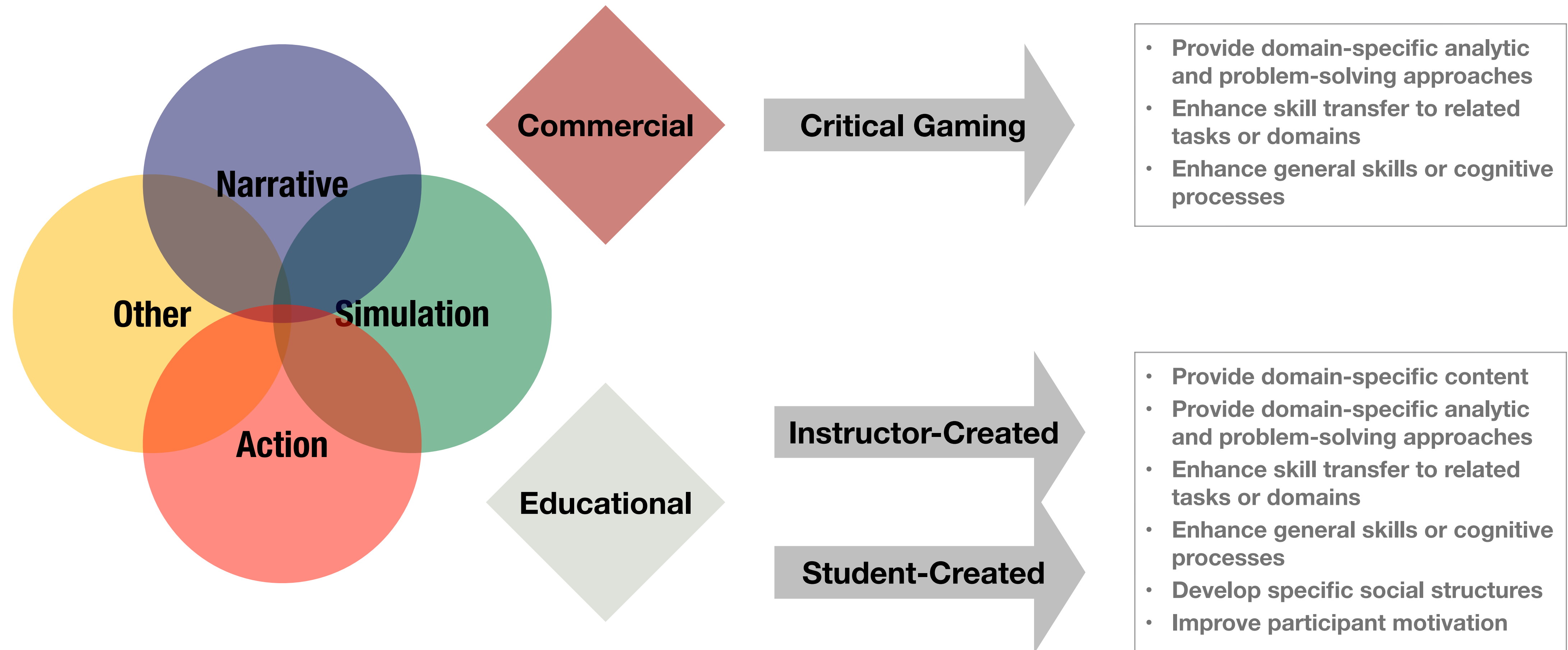
Four Keys to Emotion in Games (Lazzaro)

Players like the opportunities for challenge, strategy and problem solving.
Generates Frustration, Fiero

Players enjoy intrigue and curiosity, becoming immersed in games that absorb their complete attention or take them on an exciting adventure.
Generates Wonder, Awe, Curiosity, Mystery.

game

fiero   **curiosity**

Hard Fun

Easy Fun

goal   **open ended**

●
player experience

People Fun

Serious Fun

amusement   **relaxation**

life

Players use games as mechanisms for social experiences of competition, teamwork, and opportunities for social bonding and personal recognition.
Generates Amusement, Schadenfreude, Naches.

Players enjoy the internal experiences in reaction to the game's visceral, behavioral, cognitive, and social properties.
Generates Excitement, Relaxation.

Lazzaro, N. *Why We Play Games: Four Keys to More Emotion Without Story*. (2004)

Narrative · Other · Simulation · Action

Commercial → Critical Gaming
- Provide domain-specific analytic and problem-solving approaches
- Enhance skill transfer to related tasks or domains
- Enhance general skills or cognitive processes

Educational → Instructor-Created / Student-Created
- Provide domain-specific content
- Provide domain-specific analytic and problem-solving approaches
- Enhance skill transfer to related tasks or domains
- Enhance general skills or cognitive processes
- Develop specific social structures
- Improve participant motivation

Puentedura, R.R. *Game and Learn: An Introduction to Educational Gaming*. (2009)

SAMR in Game Selection and Design — Some Examples

- Substitution:
  - Games that reiterate traditionally taught points (note: not via disguised multiple choice)
  - Games that exercise procedural mechanics in weakly related settings

- Augmentation:
  - Games that exercise procedural mechanics in strongly related settings
  - Games that provide for student discovery of semi-explicit rulesets

- Modification:
  - Games that allow for exploration of non-explicit underlying systems and rulesets
  - Games that allow for construction of social superstructures and activities on the game

- Redefinition:
  - Games that allow for development of previously unexplored student capabilities
  - Games that allow for exploration of previously inaccessible knowledge domains

Hippasus
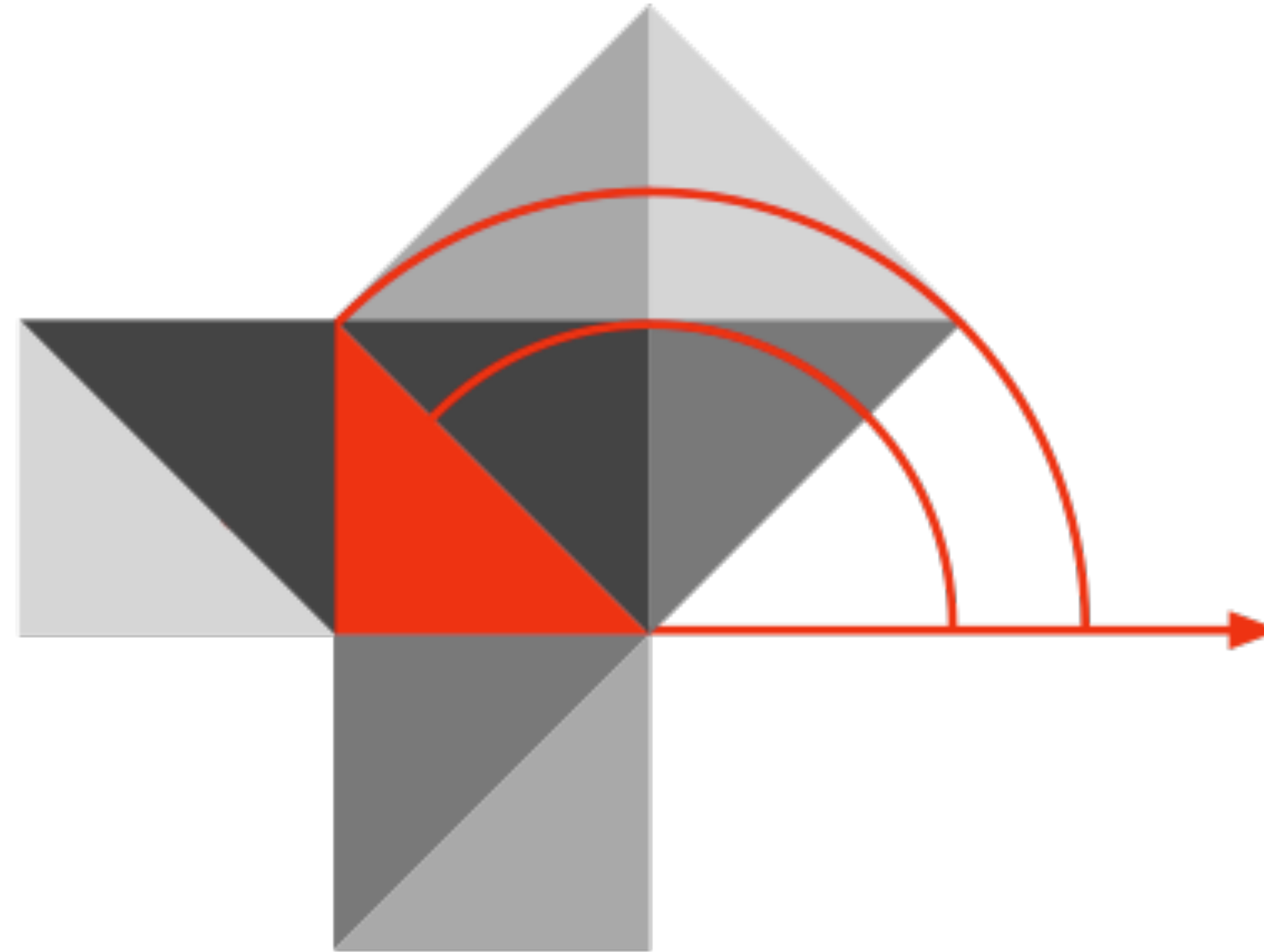
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