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Hello! I'm Dimitris Grammenos and I am a researcher at the Institute of Computer Science of FORTH.
This is a small subset (31 slides) of my presentation entitled "Universally Accessible Games & Parallel Game Universes" (206 slides) , meant to be used as a quick introduction to Game Accessibility. You can download the full version from: http://ua-games.gr/publications.html
If you liked, hated, or used this presentation, or if you have any questions or comments, please e-mail me at: gramenos@ics.forth.gr

Game Accessibility

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Computer Accessibility

- Term traditionally associated with access to computer-based systems by people with physical, sensory or mental disabilities
- In this presentation also encompasses people with "diversified needs", due to:
  - the environment they operate in
  - the devices / software they use
  - their abilities or preferences

(Video) Game Accessibility

- Being able to play a game
  - Even when playing under "limiting conditions", or having "diversified needs"
- Limiting conditions
  - Disabilities
    - Permanent
    - Temporary
- ➡ GA = Game Accessibility

Diversified needs

- Non(-native) language
- Left- / single-handed
- Bright / loud / quiet /… environment
- On the move
- Novice / casual / tired / young / old
- I/O devices
  - Touchpad, mobile screen, TV too far, keyboard key not working, “other” joystick, …..

Disabilities affecting GA

- Vision
- Motion
- Hearing
- Cognitive
- Speech
- Illiteracy

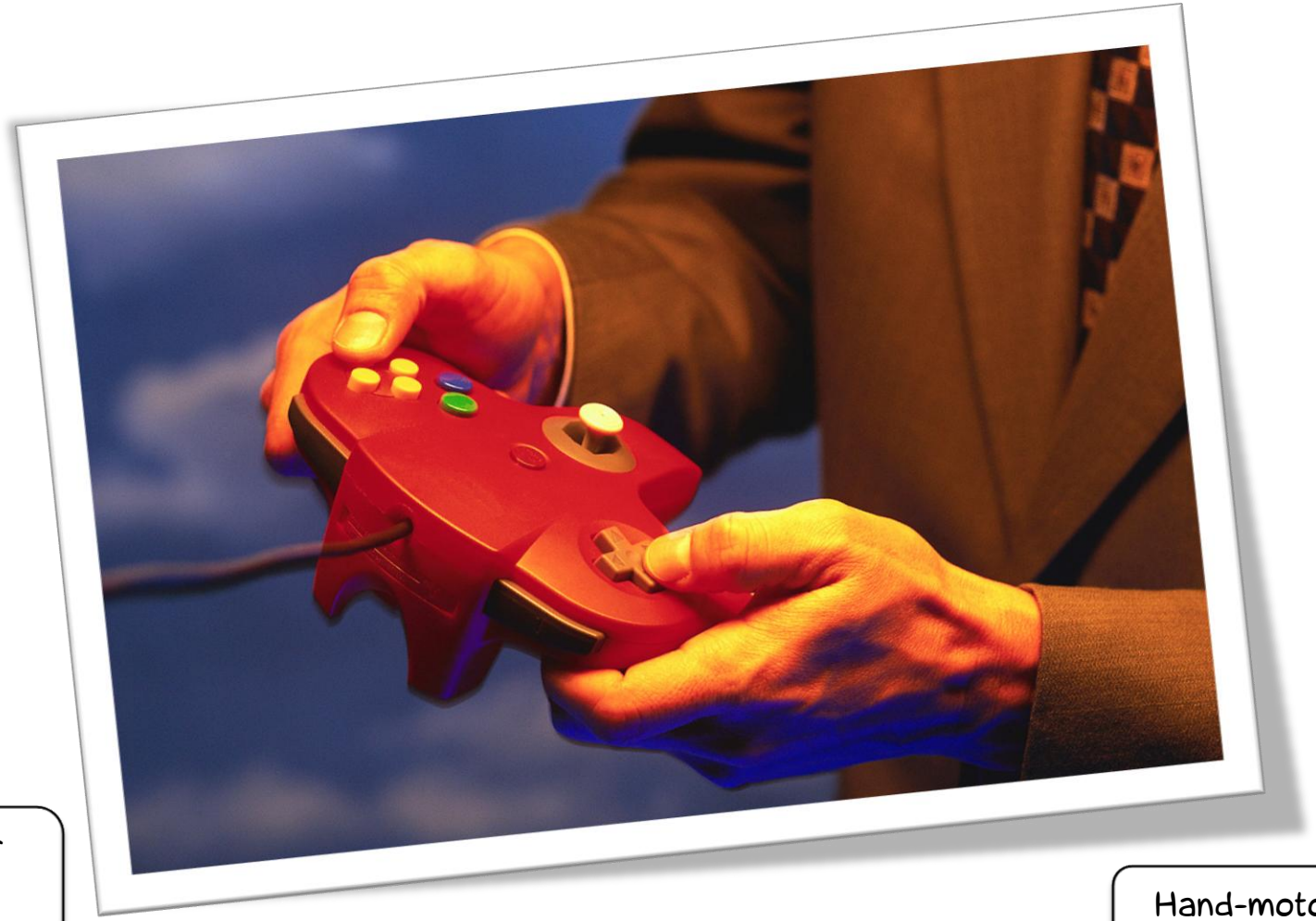
- Age-related disabilities are frequently referred to as a separate category
  - all related problems fall within some of the above categories

Typical GA problems

- Providing input
- Receiving feedback
  - And properly processing & understanding it…
- Determining what to do

- May range from annoying to making playing impossible

Providing input



Teenager with no disabilities

EASY

Adult

CHALLENGING

Novice player

HARD

Hand-motor impaired

IMPOSSIBLE

Receiving feedback

Perfect vision — EASY

Elderly — CHALLENGING

Low-vision — HARD

Blind — IMPOSSIBLE

Processing & understanding feedback

Perfect vision + using big TV

EASY

Mobile phone

CHALLENGING

Mild cognitive impairments

HARD

Color-blind

IMPOSSIBLE

Determining what to do

Expert strategy games player

EASY

Novice player

CHALLENGING

Me

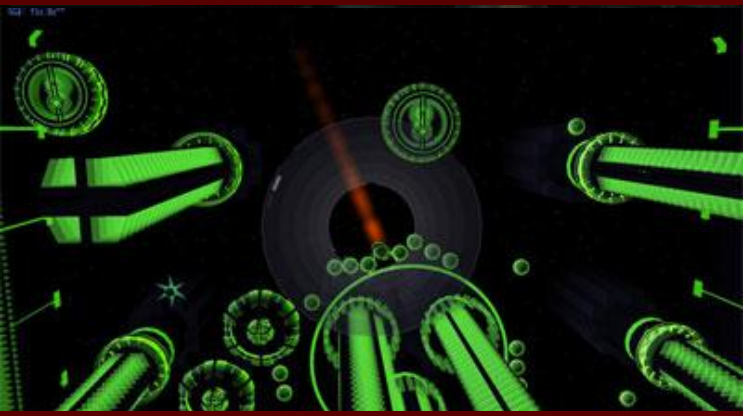
HARD

Cognitive impaired

IMPOSSIBLE

World of Warcraft (Blizzard Entertainment)

Doom3 [CC] mod by Games[CC] for Doom 3 (id Software)



Strange Attractors 2 (Ominous Development)

What kind of games?

- "Mainstream" commercial games
  - PCs, consoles, mobile, on-line, …
  - No particular accessibility considerations – various types of "adaptations" employed
- "Special" games
  - Developed to be accessible by specific user categories
    - One-switch, audio-only, etc.
  - Commercial (usually Indy) or public domain

http://kotaku.com/5082293/handicapped-ps3-owner-builds-frankensteins-controller

http://www.gamesaccessibilityday.org/

http://www.eelke.com/blindhero.html

How?

- Very often, with great difficulty
  - A lot of patience, extraordinary dedication & passion
- "Adaptations"
  - Special devices
    - Commercial
    - Custom- (home)-made
  - Special software
  - Hacking & tricks
  - Help of another person

Overview of GA Solutions (1/5)

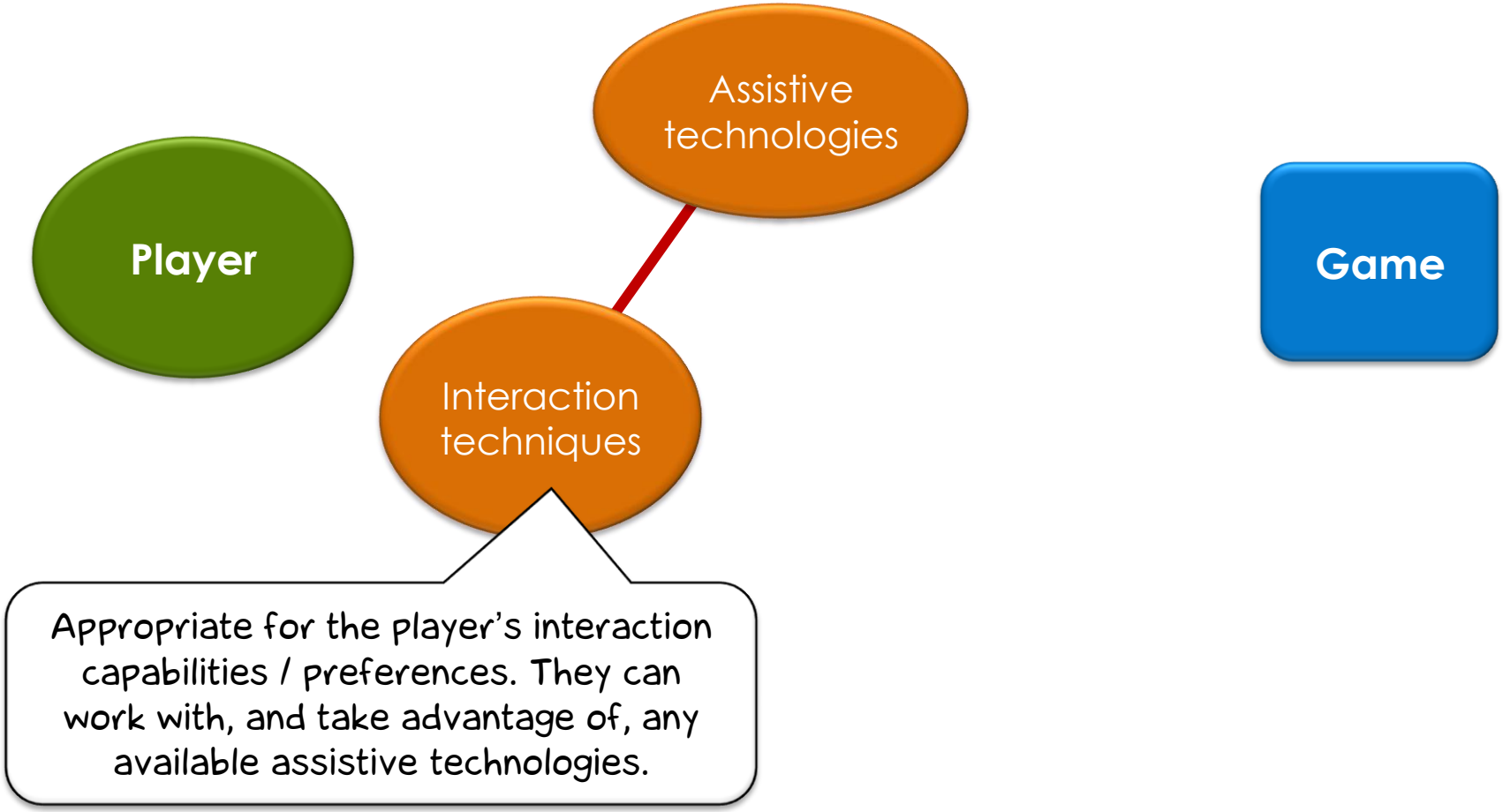
As a designer, there are 3 complementary tools that you have at hand, when you want to make a game accessible to a specific player.

Player

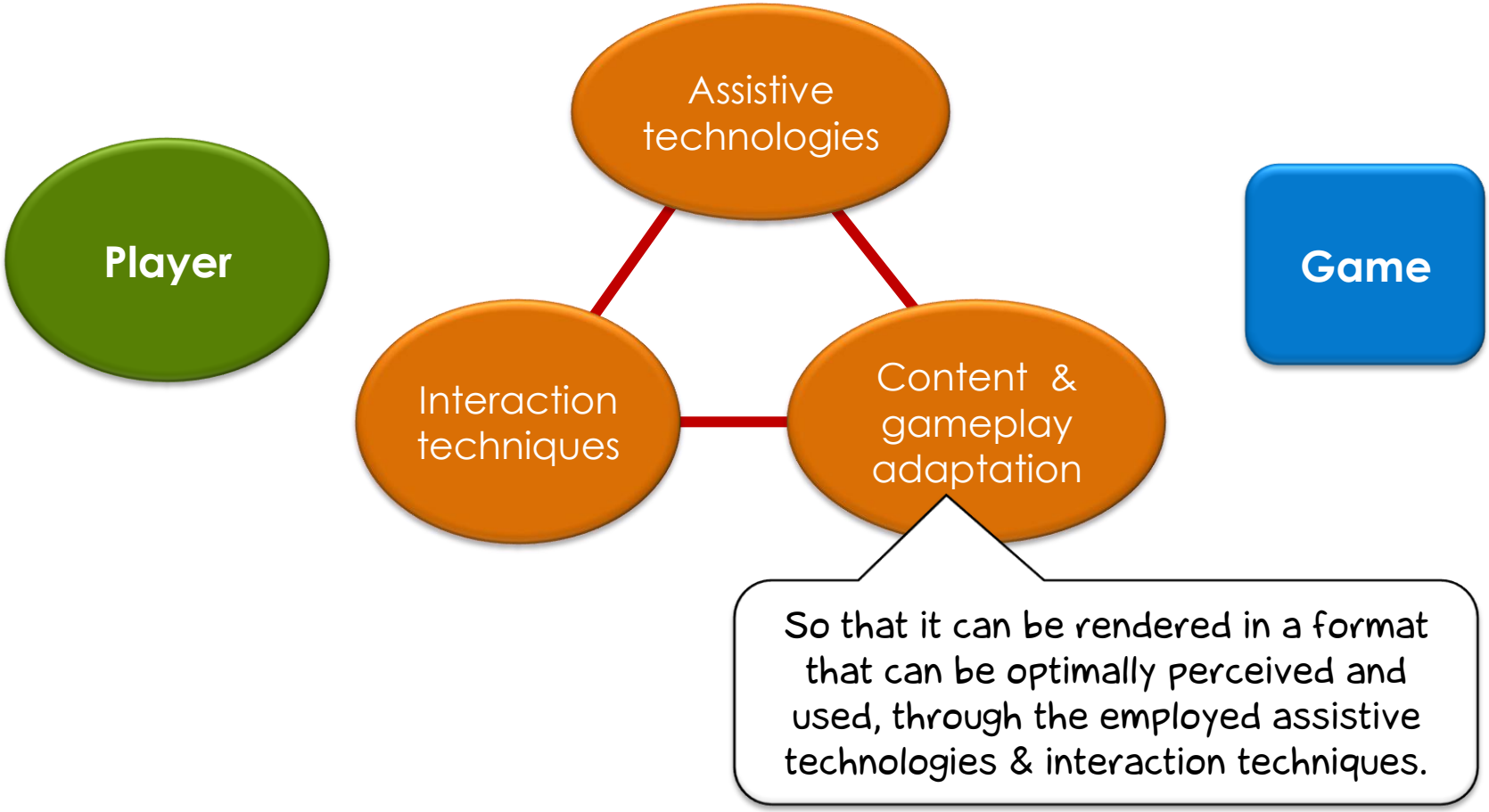
Game

Overview of GA Solutions (2/5)

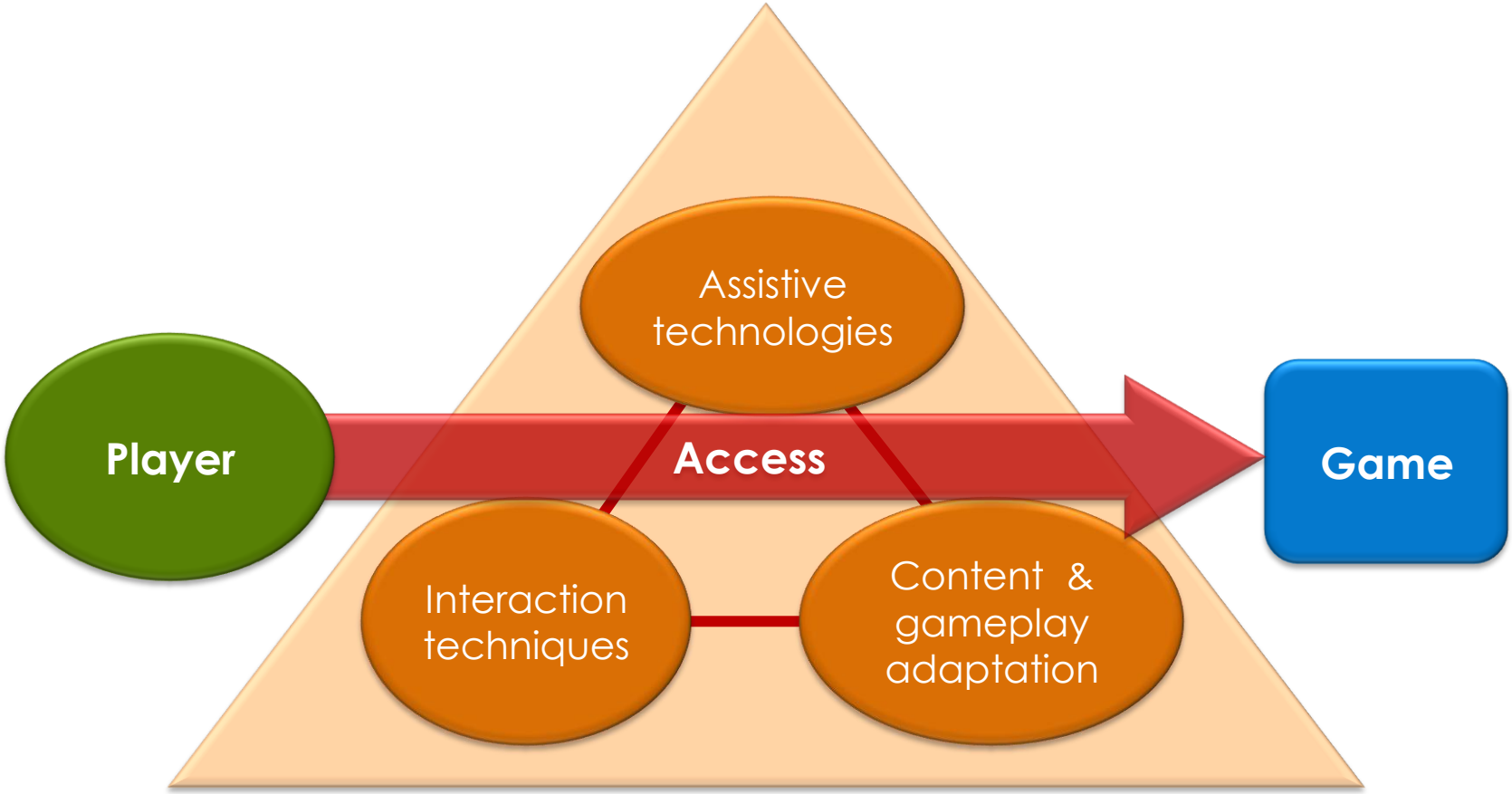
Overview of GA Solutions (3/5)



Overview of GA Solutions (4/5)



Overview of GA Solutions (5/5)



The right mix of these 3 ingredients can potentially solve any accessibility problem.

The good news…

- Although there are several different user categories and contexts of use, they share many similarities & requirements
  - a deaf person,
    someone in a noisy place,
    playing with muted sound
- Most of the time, when designing for GA, a single solution is likely to accommodate multiple problems & situations

Some things you can do (1/3)

- Support multiple input devices & techniques
- Customizable "controls"
  - Sensitivity
  - Less/simpler controls
    - Down to 1
  - No simultaneous button pressing
- Adjustable speed & difficulty
  - Automate user actions
    - e.g., shoot, move, pass

Some things you can do (2/3)

- Scalability of visuals
  - Text, game elements
- Alternative color schemes / contrast modes
- Adjustable visual detail
- Closed captions
  - Sound visualization
- Audio control
  - FX, music, speech (separately)

Some things you can do (3/3)

- Sonification
  - Audio feedback to events
  - Audio descriptions
  - Localised (2D/3D) audio
  - Reading aloud (text, menus)
- Accessible documentation

- Important note:
  - Make sure that the game is still playable & fun after selecting various combinations of the available GA options

See also: GASIG: Top 10 Ways To Improve Game Accessibility: http://wiki.igda.org/Top_Ten

Indicative benefits for all players (1/2)

- Closed captions
  - Non(-native) language speakers, playing in loud / quiet environment
- Customizable “controls”
  - Left-handed / single-handed
- Alternative I/O devices
  - Playing using alternative input devices, such as a Touchpad, non-standard controller, etc.

Indicative benefits for all players (2/2)

- Customizable "controls" & adjustable speed / difficulty
  - Novice / casual / tired / young / old player
- Scalability of visuals
  - Screen too small / very far
- Alternative color schemes / contrast modes
  - Playing in bright environment
- Sonification + simple controls
  - Playing on the move

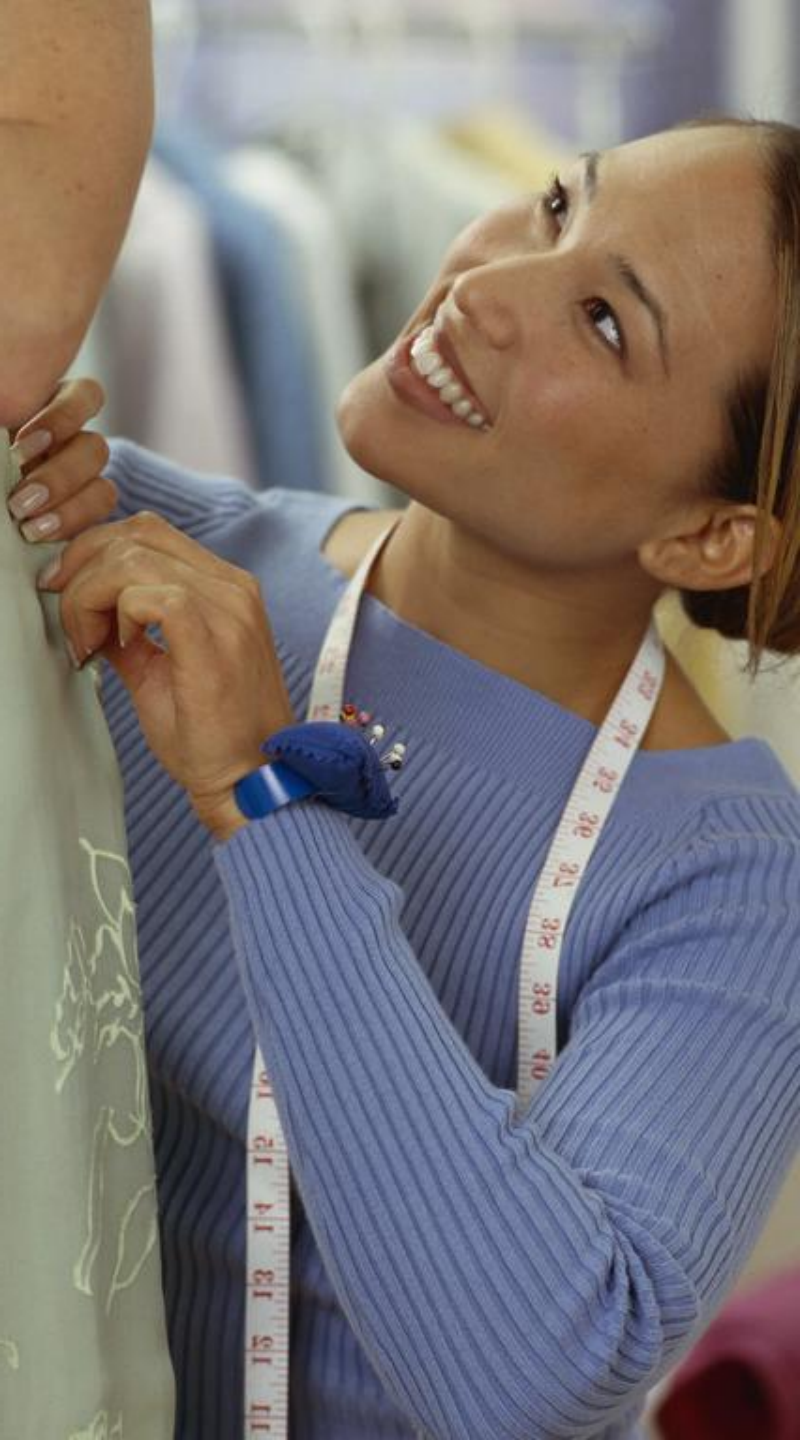
Remember…

Accessibility ≠ Usability

- A game may be accessible but still very hard (or boring) to play
  - e.g., using a virtual keyboard to play a game employing 18 keys – most of which must be simultaneously pressed

Some (harder) things you can do (1/2)

- Understand game accessibility & integrate it in the game design lifecycle
- Design your game at an abstract level first
- Create user interfaces that can support alternative interaction methods & modalities
  - that can co-exist & co-operate



Some (harder) things you can do (2/2)

- Create user interfaces able to adapt to alternative user profiles
- Consult players from diverse user groups
- Follow open & extensible interaction design
  - so that, later on, it will be possible to expand the design to cater for more user categories & contexts of use

Why should I do it, anyway? (egocentric view)

a) You are different, just like anybody else….
   - You can have games that match your skills & preferences

b) You are not getting any younger
   - Age comes with GA problems

c) Disability is not an exotic disease
   - Permanent or temporary, can happen to you, or the ones you love, anytime, any day
     - You will still wanna play, right?

Why should I do it, anyway? (exocentric view)

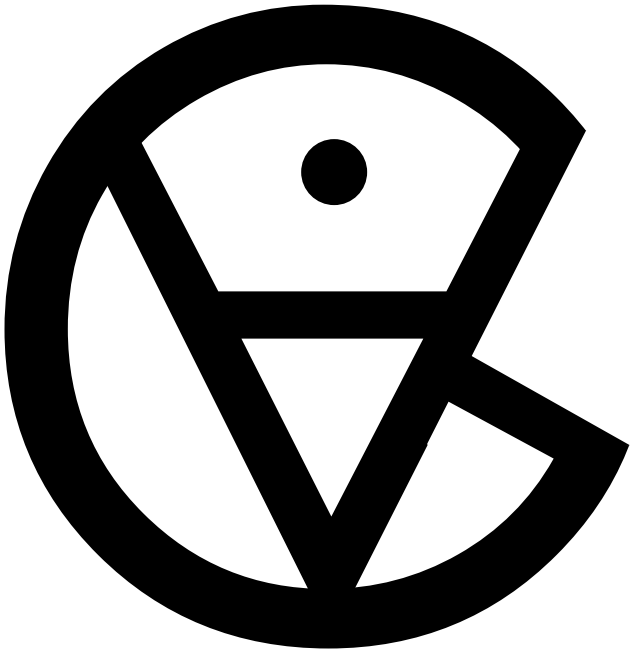
a) Your games will be better for ALL players

b) You can broaden your target market = mak$ (mor$) mon$y

c) You can make a lot of people happier :-)

d) Simply, because you can!

See also: Game Accessibility - Why Bother?
http://www.gamasutra.com/php-bin/news_index.php?story=13650



GOME PLAY