Appendix A

Designing to Appeal to Particular Groups

Introduction

In the concept stage of game design, you must choose a target audience for your game, and throughout development you must keep that audience in mind. In this appendix, we briefly address some design considerations you should take into account if you want to appeal to three groups long underserved by the game industry: adult women, children generally, and girls specifically. We also include a brief discussion of accessibility issues for players with disabilities of various kinds, as well as resources for further research. If you plan to design with these groups in mind, it pays to give extra thought to, and do extra research on, their needs and interests.

Reaching Adult Women

But what if the player is female?

—Sheri Graner Ray, *Gender Inclusive Game Design*

Men and women don't differ nearly as much as various works of pop psychology would like us to believe. Few individuals conform completely to traditional stereotypes of masculinity and femininity, and men's and women's interests overlap considerably. In *Gender Blending,* Holly Devor (1989) quoted studies showing that as many as 50 percent of heterosexual women identified themselves as having been tomboys as children. Unfortunately, far too many game designers (and product designers in general) treat men and women as entirely different species with little in common.

Gender Inclusiveness

To attract women players, you don't have to make the game about stereotypically feminine interests such as fashion or shopping, any more than you have to make games about monster truck rallies to attract men. Rather, to make a game of interest to both sexes, you only need to avoid including material that discourages one group or the other from playing. To make a game that both sexes will play, don't build content that will limit the interest of, or offend, either sex.

The biggest turn-offs for women are usually:

- Hypersexualized female avatars and other characters.
- Repetitiveness and monotony.
- Pointless play without a goal that they can relate to. Simply racking up the highest score isn't enough.
- The solitary nature of single-player play. If you're making a single-player game, there is nothing you can do about this; it's just something to be aware of.

For further reading, we strongly urge you to buy a copy of *Gender Inclusive Game Design* by Sheri Graner Ray (Ray, 2003). She discusses these issues in considerable detail.

A Few Generalities

Having warned you not to treat men and women as polar opposites, we now offer a small number of generalities about how male and female play patterns tend to differ among Western men and women (the only group upon which we are qualified to comment). These may not apply to women in Japan, China, Korea, or India—all important new markets for games.

- **Men and women like to learn differently.** Women generally like to know what they will be expected to do before they have to do it rather than be thrown into the deep end to sink or swim. Unfortunately, this makes most arcade games unattractive to women because arcade games make their money from the player's ignorance.
- **Men and women have different attitudes toward risk.** Women are more likely to avoid risks that they cannot compute. Men are more willing to experiment even if it means losing frequently.
- **Women are more interested in people than things and like to socialize as part of their play experience.** This accounts for the fact that online games are more successful than single-player games among female players: Online games allow the players to socialize.
- **Men and women have different conflict resolution styles.** Women prefer that violence have a justification; fighting for its own sake is of little interest to them. They are not opposed to violence per se, but they

like the violence to be given a context, such as a story. Women also like to use lateral thinking to find alternatives to brute-force approaches.

- **Women enjoy mental challenges and finding elegant solutions to problems.** This accounts for the popularity of puzzle games among women.
- **Women like to customize their avatars.** Men often treat their avatar characters as puppets rather than people, someone simply to be controlled for the sake of winning the game. Women tend to identify with their avatars more. A woman uses the avatar as a means of self-expression and likes to be able to make the avatar look like herself or a fantasy version of herself.

Again, we emphasize that these are generalities. While they don't describe every woman, as *general trends* you should be aware of them.

COMMANDMENT: Women Are a Market, Not a Genre

Do not try to design a "women's game" simply by creating features that address these generalities. Rather, design an intrinsically interesting game and bear these issues in mind as you consider the effect that your design decisions will have on your potential customer base.

Designing for Children

Video games for children differ from those for adults, just as books and television shows for these different populations differ. Nor is there one single type of game appropriate for children—their motor and cognitive skills change throughout childhood. The commonly recognized age categories are:

- Preschool and kindergarten (ages 3 to 6)
- Early elementary (ages 5 to 8)
- Upper elementary (ages 7 to 12, the *tweenies*)
- Middle and high school (13 and up, the teens)

Each of these groups has, on the whole, its own interests and abilities. Because we encourage children to aspire to adulthood and its privileges and discourage them from acting young ("don't be a baby"), kids tend to scorn anything made for an age group younger than themselves. As a general rule, entertainment made for children of a certain age group will actually feature characters older than the players.

If you're planning to make games for children, consider the following issues.

- **Hand-eye coordination.** Young children's motor skills are poorly developed at first, while those of teenagers often surpass those of adults.

- **Cognitive load.** Children can solve puzzles just as adults can, but for younger children the puzzles shouldn't be too complex. The number of elements involved must be fewer, and the chain of reasoning required must be shorter.
- **Frequent rewards.** Games for older players often require the player to go through a great many steps before reaching a reward. We expect adult players to be patient and to regard their progress alone as sufficient reward. Children need feedback more frequently. You don't have to have a saccharine character say "Good job!" every single time they do something right, but provide a clear and pleasant indicator of success.
- **Visual design.** Young children don't have as much experience as adults do at filtering out irrelevant details, so keep the user interfaces in games for children simple and focused; make them deep rather than broad.
- **Linguistic complexity.** Don't talk down to children, but use age-appropriate vocabulary and syntax. Long sentences full of words that they don't know turn kids off. Short sentences made up of carefully chosen words can still express quite sophisticated ideas; for an example, read Saint-Exupéry's *The Little Prince.*
- **Appropriate content.** This tricky area actually has more to do with what parents want for their children than what the children want for themselves. Adult themes are not so much wrong for children as they are irrelevant. Children's entertainment needs to address children's concerns. This is one of the reasons the early Harry Potter books are so brilliant; they capture children's concerns perfectly. Kids easily identify with Harry's feelings of alienation, being misunderstood by his family, and his sense of latent but untapped promise. Even the emphasis on food in the early books is significant; for younger children, food is a major interest and a big part of their daily routine.

In keeping with our approach of avoiding things that drive a target audience away, we briefly summarize the "Seven Kisses of Death" devised by Carolyn Handler Miller, a longtime developer of entertainment for children. The Kisses of Death are widely held misconceptions about what children like, generally founded on what adults *want* them to like. These seven characteristics, however, actually turn kids off. For a full discussion we recommend her book *Digital Storytelling: A Creator's Guide to Interactive Entertainment* (Miller, 2004).

- **Death Kiss #1: Kids love anything sweet.** This holdover from Victorian ideals about childhood holds true for toddlers, but any kid older than that knows the world isn't sugar-coated and will reject the suggestion that it is. Think about the Warner Brothers cartoons: wisecracking Bugs Bunny; Sylvester the cat's endless efforts to eat Tweety Bird; Wile E. Coyote's similarly endless efforts to kill the Roadrunner; homicidal

Yosemite Sam and rabbit-cidal Elmer Fudd. Kids love these cartoons—which actually include a sneaky moral about violence redounding upon the violent—but there's nothing remotely sweet about them.

- **Death Kiss #2: Give them what's good for them.** Kids are forever being told what's good for them. They're made to eat food they don't like; they're made to go to school; they're made to do chores, learn to play the piano, and a million other things supposedly meant to build their characters or strengthen their bodies or minds. Most of this is reasonable and necessary, but not in an entertainment context. How would you, as an adult, like to be fed a dose of propaganda with every book and TV show you saw? You wouldn't, and neither do kids. When they want to relax and have fun, they don't want a dose of medicine with it.
- **Death Kiss #3: You've just got to amuse them.** This is the opposite of Death Kiss #2; it cynically assumes that kids are less discriminating than adults, so any old fluff will do. It won't. Kids can't tell the difference between good acting and bad acting, and they aren't experienced enough to recognize clichéd plot lines, but they won't put up with just anything. Walt Disney realized this, and so do the writers and animators who continue his work; Disney movies are multilayered even though they are for children. So, too, are the best children's books. Meaningful content will keep a child's attention longer than trivial content.
- **Death Kiss #4: Always play it safe!** This is a variant of the "sweet" Death Kiss. Some people, in an effort to avoid violent or controversial content, go overboard and try to eliminate anything that might frighten or disturb a child or even raise her pulse. This inevitably results in bland, dull entertainment. Again, look at Disney films for good counter-examples: Dumbo's separation from his mother; Snow White's terrified flight through the forest; the outright murder of Simba's father in *The Lion King.* These are not happy things, and that's okay. Gerard Jones argues in his important treatment of the subject *Killing Monsters: Why Children Need Fantasy, Super Heroes, and Make-Believe Violence* (Jones, 2002) that learning to deal with threatening situations constitutes an important part of growing up.
- **Death Kiss #5: All kids are created equal.** There's no such thing as a single children's market. Kids' interests and abilities change too quickly to lump them all into a single category. If you're planning to make a game for ages 6 to 10 and the publishers decide they want a game for ages 8 to 12, you'll have to redesign the game. One-size-fits-all definitely doesn't work with kids.
- **Death Kiss #6: Explain everything.** Kids are much happier with trial-and-error than adults are, and they don't want long introductions explaining how to play the game. They want to dive in and play. Above all, avoid

talking heads with a lot of jabber. Adults naturally tend to assume that kids need things explained to them, but it's not true of video game worlds in which they can't hurt themselves or anything else. Keep exposition—and especially anything that smacks of teaching them—to a minimum.

- **Death Kiss #7: Be sure your characters are wholesome!** Wholesome equals boring. We wouldn't put up with bland white-bread characters in entertainment for adults; why should we make children do it? You don't have to introduce serial killers, but create real characters with their own personal foibles. *Sesame Street* famously offered a variety of characters, many specifically designed to represent moods or attitudes familiar to young children: greedy, grouchy, helpful, and so on.

Games for Girls

The game industry has always been overwhelmingly dominated by men, and male developers have tended to design games that they themselves would like (or would have liked when they were boys). Whether for societal or genetic reasons, boys' and girls' interests diverge more widely from one another than men's and women's do; on their respective bell-shaped curves, the means are farther apart. At certain ages, boys and girls may flatly reject things (clothing, toys, or other symbols) associated with the opposite sex.

For most of the game industry's history, no one made an effort to design games specifically for girls or even to think much about what kinds of games girls would like. It was a catch-22 situation: If you proposed a game for girls to a publisher, you would be met with the reply, "Girls don't play video games." But, of course, the reason girls didn't play video games was that there weren't many games they liked to play—or at least that was the general perception. (Further research showed that this was an unfounded stereotype; far more girls played games than people realized, even though no one was considering their interests.)

In the mid-1990s, a number of people realized that girls represented an untapped market, and several companies grew up to exploit it. One in particular, Purple Moon, did a great deal of research into how girls play games and what kinds of games they would like. Unfortunately, Purple Moon took this research and published graphically poor games that took little time to finish and generally offered less value for the money than most other games. The games didn't sell well, and eventually Purple Moon got into financial trouble, to be bought out by Mattel, the toy company. Industry attention waned, and games for girls ceased to be a major subject of debate.

However, we think it's an area worth discussing because even though some people continue to make money with games for girls, it remains an underserved market. Remember, however, that we're talking about *girls,* not women. Adult

women are naturally more diverse than children and have a wider variety of interests. Don't assume that what applies to girls also applies to women generally.

Mattel's Approach

If you want to make games specifically for girls, as opposed to games that appeal to children of both sexes, you have to ask yourself what especially interests girls—and, perhaps more important, what does *not* interest girls. For the answer, you need look no farther than Mattel, manufacturer of Barbie®, the single most famous toy for girls in the world. Mattel's great success developing games for girls results from its understanding of its target market. (Mattel doesn't publish software itself anymore, but licenses its brands to others.)

Barbie's success derives partly from the proven, time-tested formula she follows, and a well-targeted market: Mattel aims Barbie at a core age group from 4 to 8 years old. After that, girls' interests change, and Mattel does not try for a one-size-fits-all approach. The company has no social agenda and makes no claim of political correctness.

IN THE TRENCHES: Jesyca Durchin's Advice

Jesyca Durchin is the owner of the consulting company Nena Media **(www.nenamedia.com),** which creates media content for young girls, and she is a former executive producer for Mattel. At the 2000 Game Developers' Conference, she gave an extremely useful summary (Durchin, 2000) of what she had learned about how girls in this age group play games:

Girls Have a Wide Variety of Interests.

It is *vital* to identify what type of girl is interested in your type of game. Girls are much more fragmented in their interests than boys. Girls change more rapidly, and their emotional and intellectual growth happens differently. A girl will have different needs in her playtime almost every year of her childhood—loosely defining childhood to be ages 4 to 14.

Hinge Interactivity on Proven Play Patterns.

A play pattern is a traditional and almost instinctual way a child will approach an object or an activity to entertain herself. Girls traditionally value the following:

- Fashion play
- Glamour play

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- Nurture play
- Adventure play
- Action/twitch play
- Collection play
- Communication/social play

As well as exercising their own imaginations, girls like to reproduce daily life in play. Barbie is a vehicle for projecting adult activities into a child's world. Don't be afraid of open-ended or non–goal-oriented play.

Here are a few more observations:

- **Girls like *stuff*.** Stuff is what the girl can collect, display, or take away from the product. It is incredibly important for the girl to feel there is a reason for her to play. In some ways, collecting stuff replaces the concept of scoring in traditional boy's software. Collecting each one of a variety of shells, for example, is more interesting than trying to achieve a high, but abstract, numerical score.
- **Create environments that are attractive to girls.** Girls like environments that are reality-based but either are beautiful or make sense to the storyline. Symmetry and color coherency are important to girls. Not everything has to be pink, purple, and pretty, but each environment should give the girl the feeling of being in another place. Girls (and boys) are highly imaginative, and they will create alternative storylines in their own heads. Be aware that the girl's imagination will influence her view of your environment.
- **Girls appreciate sensual interfaces.** Girls tend to respond more positively to what I refer to as the sensual interface. They need colorful, sound-driven interfaces that "feel" good. The interface needs to feel magical and needs to have what I call the *brrrring* factor. Don't give girls a group of identical gray pushbuttons, no matter how logically organized they may be; give them buttons that ring and change shape and color.
- **Extend the play from existing toys or media into software.** Branding is becoming more and more

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important in the business of software. It is doubly important in the girl's software business because girls are still just getting involved in viewing the computer as an entertainment tool. Branding is important to rising above all the muck.

- **Don't be ashamed of your work.** If you're embarrassed by what you're doing, it will show. Do it wholeheartedly or don't do it at all. Girls can tell if you're ashamed of making games for them. If you're uncomfortable using terms like "hair play" or "relationship games," don't bother.

A Few Misconceptions

Because people see fewer girls playing hardcore games than boys, they have tended to jump to conclusions about what girls want. Here, we correct a few of these misconceptions.

- **Girls don't like computer games because computers are techie.** This is patently false. Although most girls and women generally are less fascinated by the technical details of computers than are boys and men, that doesn't discourage them from playing computer games any more than automotive specifications discourage them from driving cars.
- **Girls don't like violence.** No, what girls don't like is nonstop, meaningless violence. It's not so much that they're repulsed by it as that they're bored by it. It doesn't stimulate their imaginations. If you've seen one explosion, you've seen them all.
- **Girls want everything to be happy and sweet.** Not true. Have you ever seen a group of girls setting up a party and planning to exclude someone? Girls are perfectly capable of being deliberately hurtful. If you read books written specifically for girls, you'll see that they're not just saccharine from one end to the other. Girls like stories filled with mystery, suspense, even danger—but again, it has to be meaningful, not just random or pointless.
- **Girls don't like to be scared.** This is only partially true. Jesyca Durchin makes a useful distinction between *spooky* and *scary*. Girls like things that are spooky but not scary. The abandoned house that contains a clue to the mystery or the carnival at night are spooky. Walking through dark streets with a murderer on the loose is scary. *Spooky* is about the possibility of being startled or frightened; *scary* is about the possibility of being hurt or killed.

A Final Note

Bear in mind that these are generalities. We wouldn't claim that the characteristics described previously appeal to all girls, but they certainly appeal to many. You should take them into consideration if you're trying to make a game for girls.

Some developers, both male and female, find the idea of making games about hair, clothing, and makeup repulsive; they feel that this perpetuates a stereotype of femininity. Although there's some merit in that argument, a vastly larger number of games perpetuate a much more unfortunate stereotype of masculinity: They depict men (and reward players) who are violent, greedy, wanton, and monomaniacal. To condemn games for girls on the basis that they're stereotypical is to establish an unfair double standard.

Accessibility Issues

Although it took them a while to get around to it, Microsoft now leads the world in making their operating system and office products available to people with disabilities of various kinds. The game industry, regrettably, remains far behind. Our origins in arcade and twitch gaming have produced an unquestioned assumption that games are only for people with excellent eyesight and good hand-eye coordination. But many people who don't possess these abilities also would like to play games, and we encourage you to consider ways to make your game more accessible to them.

Physical impairments fall into three general categories: visual, auditory, and mobility.

Vision-Impaired Players

Vision impairments fall into several subcategories that require slightly different adjustments. In any case, you should provide audio cues to go with visual cues. Very little in a video game should happen absolutely silently. When a player selects a unit, have the unit acknowledge its selection with a sound. When the player gives an order, presses a button, or chooses a menu item, be sure to indicate it with an audible cue. These cues can be quite subtle; there's no need to ring loud bells, but make sure the player hears something, even if only a little *tick* sound.

Players with Low Vision People with cataracts and similar conditions simply require brighter, more high-contrast images. You can provide for them by letting players adjust the contrast in your game, assuming that you have a display engine powerful enough to support this feature. These players will probably already have turned up the brightness and contrast on their monitors but your game can further augment this. Also, make the textures in your game available for modification. Vision-impaired players can then edit your textures to meet their own needs, and you don't have to do the work.

Be sure to include enough contrast in your user interface elements as well as your game world. Don't try to be cool by using black-on-black or gray-on-gray menus or indicators.

Players Who Need Magnification Many vision-impaired players simply need everything to be a bit larger. Older players provide a good example; after about age 45, most people need reading glasses—but even reading glasses aren't much help with tiny type. Tiny type is a bad idea in any case, especially if players have to read it under time pressure.

You can meet the needs of these people in three ways. First, if possible, allow players to change the font size of text that appears in your game, the way Web browsers do. Second, support multiple monitor resolutions in your game. Let players who really need to see things in larger scale set their monitors to 640×480. If you have a complicated user interface, this may be rather tricky, but if it is, perhaps you should revisit the design of your interface and see if you can do without some of those screen elements. If you have a broad interface, consider making it deeper.

Finally, you can provide a magnifying glass feature that the player can move around over the screen to magnify different areas. The device probably won't be usable in action scenarios, but at least it's trivial to implement. *Strange Adventures in Infinite Space* includes a magnifying glass and switchable menu sizes, both very helpful.

Colorblind Players Color blindness is a sex-linked genetic disorder primarily affecting men. Total color blindness is quite rare, but one form of mild color blindness (*deuteranomaly*) affects about 6 percent of the male population. Persons with this disorder have reduced sensitivity to different shades of green; they appear more like yellow. (So-called red–green color blindness is actually a misnomer for several related conditions.)

This issue matters most in user interface design. If you create identical objects distinguishable only by their color, and you use similar shades of yellow and green, you risk confusing the colorblind player. Vehicles or characters in a strategy game whose appearance is identical except for their color would be an example. Also be careful with indicators, such as colored lights, that turn yellow or green. Colorblind drivers can tell the difference between yellow and green traffic lights because the yellow and green lights are separate lights, so even if the driver can't see a difference, he can tell whether the signal is yellow or green by its position (the middle light is always the yellow light). You can adopt this convention too: make more than one light, with the yellow light in a predictable location. If you don't have room and have to make do with a single light, we suggest you use colors other than yellow and green, such as black and white or black and green.

You may test the appearance of your artwork to players with different forms of color blindness at the Vischeck Web site, **www.vischeck.com.**

Hearing-Impaired Players

To help support hearing-impaired players, we offer three suggestions: First, wherever possible, provide visual cues as well as auditory ones for important events. If a car scrapes along a railing, show sparks; when a gun fires, show a muzzle flash. Naturally there will be some circumstances in which you can't do this. In horror games, scary sounds often come from unseen sources, and that aspect is critical to creating the desired emotional effect. But for games that aren't in the horror genre—which means most of them—you should be able to design for hearing-impaired players by including visual cues for the most critical audible events.

Hearing-impaired people often complain that they cannot filter out background sounds from foreground ones, so conversation becomes impossible in noisy environments. To alleviate this problem, we suggest that you allow players to set the volume level of music separately from sound effects, including muting one or the other entirely. If you can, separate spoken dialog into a third category and let the players control its volume level, too.

Finally every game that features recorded dialog should include optional subtitles, also called *closed captioning*. Very inexpensive to implement, the biggest drawback of subtitles is that you must leave space for them on the screen. You should also consider using subtitles to indicate key sound effects. *Half-Life 2* includes closed captioning and uses different colors to indicate different speakers.

For more information on accommodating hearing-impaired players, visit Deafgamers.com at **www.deafgamers.com.**

Mobility Impairments

The best thing you can do for mobility-impaired players is to reduce the time pressure required to accomplish tasks. Many people with physical impairments can manage well enough given time, but they don't always get the time. If it's feasible, include a switch that lets the player adjust the speed of the game. There's no such thing as *too slow*.

Keep your control set simple. *Strange Attractors,* one of the finalists at the Independent Game Festival in 2006, uses a single button for player control. *Weird Worlds: Return to Infinite Space* uses a purely mouse-based interface. Researchers are also working on ways to adapt games and game controllers to what is called single-switch operation; see the Accessibility Resources later in this section for more details. Obviously not all games can make do with so few controls, but even if you're not specifically designing for the mobility-impaired, you will find it a useful exercise to ask yourself how well a mobility-impaired person would do trying to use your interface. If your answer is "not that well," perhaps you should revisit the design of your interface.

If you implement fidgets for characters while they're not doing anything, don't include any that make fun of the player for being slow. (Sonic, in *Sonic the Hedgehog,* used to fold his arms, tap his foot, and look irritated if the player didn't do anything for a certain length of time.) Use animations that don't appear to pass judgment.

Older Players

Be aware of the changing demographic of game players. As the gamer market ages, older people play games more frequently, particularly casual Web-based games. Older players frequently have some or all of the above accessibility problems, yet they still want to play games. A needlessly complex interface or exclusionary design may cost you market share.

Accessibility Resources

For additional information on accessibility issues and video games, please visit the following Web sites.

IGDA Accessibility SIG—**www.igda.org/accessibility/**

The Bartiméus Accessibility Foundation—**www.accessibility.nl/games/**

UK Accessibility Site Article on Games—**www.bbc.co.uk/ouch/closeup/gaming.shtml**

The OneSwitch Organization—**www.OneSwitch.org.uk**

Accessibility Top Ten List—**www.retroremakes.com/forum2/showthread.php?t=6551**

Physical Barriers in Video Games article—**www.oneswitch.org.uk/2/ARTICLES/physical-barriers.htm**

Examples of games with a wide variety of control mechanisms—**www.ics.forth.gr/hci/ua-games/games.html**

Games playable by sound alone—**www.audiogames.net**

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