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# Browsing Pornography: An Interface Design Perspective

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**Abstract**

As an extreme case of browsing, the pornographic browsing experience has several unique UI characteristics: it requires simple, lightweight controls; usage needs to be discrete; users' mental and physical context need to be respected, and common, repeated interactions need to be supported. While we identify design goals for user interfaces to better support browsing of pornographic images and movies, the same goals are applicable to other non-controversial browsing activities.

**Keywords**

Browsing, pornography, user interface design

**ACM Classification Keywords**

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

**Introduction**

On-line pornography is a legal billion dollar industry. Whether we like it or not, many people spend considerable time browsing and using pornography sites for personal pleasure. While we personally do not condone the moral values of this industry, we believe that it is worth considering pornography browsing as an extreme case of UI design. As we will see, insights gained by examining pornography browsing can be applied to less controversial browsing activities.

In this paper, we consider the activity of recreational browsing of pornography and erotica by a single user for purposes of self-stimulation. While some of our writing is in a humorous tone, the content and analysis is serious. We structure our discussion as a set of design goals for pornographic browsing systems, as well as other more conventional systems that share similar use characteristics.

### Design Goals

Online pornography is a hypermedia image and video collection. When browsing online pornography, the typical user seeks high bandwidth visual output, while he is focused on discovering and manipulating visual stimuli leading to arousal and sexual satisfaction through masturbation. This means that the user's dominant hand may be occupied and unavailable. At the same time, the level of browsing control desired and visuals selected depend greatly on the user's mood. For example, a person may want fine-grain control over occasionally rapid transitions of the displayed content depending on how aroused they are and distance to climax. Obviously, web browsers, image browsers, and media players are not sensitive to this particular type of user activity.

#### *Lightweight Input*

Current browsing applications follow conventional UI designs that require the user to click on several small Fitts' law targets [2], or use many keys of the keyboard. However, the pornographic browsing design space has one fundamentally unique characteristic: the user's dominant hand (or even both hands) is heavily engrossed in another task, forcing them to use their non-dominant hand (or feet) for fine motor control. Fortunately, the control requirements (i.e. "set of input

commands") are fairly limited in these scenarios. Thus, we recommend that such systems have only a few easily selectable UI controls that allow gross targeting, i.e., large selection targets that favor directional control. Example techniques could include radial menus [3], or hitting the edges/corners of the screen with the mouse pointer giving effectively infinite target size [4]. Input techniques could also favor rapid image switching. For example, they could display a palette or directional menu of subsequent images that the user could navigate to. One possibility presents four different thumbnail images at the corners of the display, where moving to one of the regions would select and display that image while raising the next set of four images. The system could also favor use of large and easy to press keys such as the space bar or enter key. Another consideration is that the user may nervously key or click twice; these extraneous clicks should be ignored. If neither hand is available for input, some users may choose to use their feet, e.g., by placing the keyboard on the floor. In this case, an input strategy could divide the keyboard into two previous and next buttons by selecting any key combination on its left vs. its right side. Depending on that person's fetish, a specialized *foot mouse* may be appropriate.

Other input modalities can be considered, such as the use of the computer microphone to capture voice for appendage-free browsing control. However, this may be error prone, slow and violates our *discretion* design goal mentioned below. Alternatively, some users might have computer game controllers, and these could be used to drive the interaction. For instance, the analog stick found on popular PlayStation DualShock style controllers [5] could be used for smooth feeling, one-handed thumb input. Using the thumb also gives a

higher Fitts' index of performance. We also suspect many pornography browsers are young game players already highly adept at using game controllers.

### *Discretion*

Pornography is typically browsed in environments where user's activities must be discrete, both visually and aurally. For instance, one might browse at night with loved ones or parents sleeping. Privacy in such situations can be preserved by several means. First, a single rapidly selectable action would immediately pause all browsing, remove any incriminating visual traces from the screen, and mute audio. For false alarms, a reverse action should facilitate easy resumption of activities. The support we suggest here is similar to the "boss key" in some older video games designed for play in work environments. For movies, the audible dynamic range can vary dramatically and quickly: unexpected increases in the audio track or between videos can be very telling to others in the environment. Monitoring and normalizing for these spikes to a low but still pleasing level would be helpful. Of course, discretion is an optional in some settings, as there are certainly occasions when there are no constraints on volume or activity.

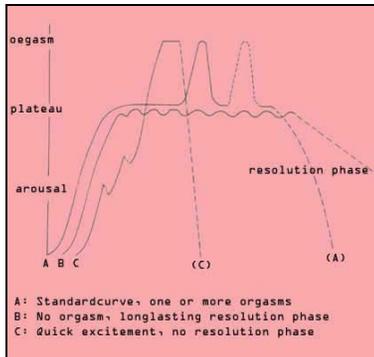
### *Respecting the User's Curve*

Sexual response has four distinct phases: arousal, plateau, orgasmic and resolution [1, 6] (Figure 1). Yet conventional browsing techniques offer a uniform interface throughout the browsing process. This is less than optimal. During initial phases of arousal, users may be more willing to navigate and search for images. As arousal is heightened, navigation becomes distracting, as the user may prefer to consider only a subset of the gathered material. In addition, during

climax the user may not want to see images or videos that are inappropriate to their mood, e.g., heterosexual users may not want to see images with a member of the same-sex prominently displayed. After climax it may be pleasing to see soothing graphics, such as those found in music visualizers, to aid the gentle release from the activity. To support discretion, the system could at this point clean up after itself and, if the user wishes, remove any incriminating traces of pornographic activity from the computer. No further interaction should be required after the climax phase, allowing the user to fall asleep or leave the computer if they wish. Fluid transitions between sexual response phases are ideal. Of course, machine-detection of arousal states is hard. Perhaps arousal may be monitored with the use of the microphone, or more accurate readings bio-measurements could be taken with galvanic skin response sensors potentially embedded into the mouse, keyboard or chair. Phase detection based on analyzing timing of user interaction may also be possible.

### *Lightweight Bookmarking*

Since a person may repeatedly browse their personal pornographic collection (either gathered in the past or just collected in the current browsing section), it may be useful to facilitate human or machine created bookmarks to specific images, to specific points in movies, and to specific image sequences or video sub-clips. One constraint is that users may not be willing to do this annotation outside the browsing activity itself. Perhaps a streamlined bookmark mechanism that is easily triggered while viewing images or movies is desired. Because bookmarks are added on the fly, techniques that include (say) a few seconds of video prior to a key press may be helpful. In addition, we



**figure 1.** Sexual response curve, from [1].

may be able to identify semantic information about bookmarks by analyzing where a user previously finished viewing a movie or use information detected about the user's sexual phase at the time the bookmark was created.

### Discussion

While pornographic browsing is a single, extreme UI task, it shares usage characteristics with other tasks. We believe the design goals derived for an optimal pornographic browsing experience are helpful in other less controversial interactive browsing domains. Lightweight input mechanisms are important for any audience that browses while doing other manual tasks, e.g., an outdoor work environment where people wear gloves. Discretion is important for anyone browsing in a context that demands some privacy; this could be as mundane as searching for a birthday present for one's partner. Analogous to respecting the sexual response curve, knowing a person's mental state is helpful in deciding when the system should display information, e.g., as in notification and interruption systems. Rapid bookmarking would benefit almost all information browsers. These benefits are even more applicable as people work 'off the desktop'. For example, PDAs and tablets are increasingly common means for people to browse information while on the move. Yet these mobile devices are often used in a one-handed mode; sensitive information may be inadvertently viewed by others; a person may need to rapidly flip between found information; and their use can be highly dependant on a person's moment by moment context.

Of course, our design goals could be better informed by a user study of people browsing pornography. However, we are hard pressed to see how this would be accepted

by our University ethics committee, as well as by our colleagues. Although we anticipate problems attracting subjects, perhaps we could interview users about their pornography browsing habits and activities. We could also design a prototype that implements our design goals, but are left uncertain about how we would validate the system in use. We could try it ourselves, but we are unsure about what our partners would say.

### Conclusion

We have presented a series of design goals and concerns for future designers of interfaces for browsing pornographic materials as a masturbatory aid. Current generic image, video and web browsing interfaces are not sensitive to the issues surrounding pornography such as those presented here. By being mindful of our design goals for Lightweight Input, Discretion, Respecting the User's Curve and Lightweight Bookmarking, pornographic browsing and other related activities could be enhanced and made more enjoyable.

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