no-jpeg.org

A Strategy for Disarming Graphic Content on the Internet

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Abstract

Rather than exercising judgment and learning precepts, the Internet generation is being led by their eyes while perceiving very little. Literacy and descriptive content is now submerged by non-artful and pornographic images. JPEG and other high-compression formats provide little benefit as embedded media on the Web, and contribute to mental and spiritual atrophy. This is a call to elevate written language as the preeminent media for communication and learning.

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1. Guarded by Near-Sighted Watchmen

By 1997 the graphical web, e-mail, and instant messaging were common in American households. Christians loudly denounced the disintegration of the entertainment industry, but they had no strategy for dealing with the vices of the Internet. The World Wide Web should have easily been identified early on as the most significant development to watch. The Web was becoming so popular that it was wrongly confused with the Internet itself, so that "go to Yahoo-dot-com" meant "open your Web browser and enter `http://www.yahoo.com`".

More than ten years later, conversations about the dangers of the Web, and the Internet in general, occasionally surface on radio broadcasts, but the advice is nearly always concerned with warning children of predators, while adults are simply exhorted to stop poisoning their minds with pornography.

Religious groups who pride themselves in being community-driven, missional and entrepreneurial seem to be unified in their belief that all forms of visual media are good, and that it is the duty of the church to infiltrate secular venues. Technology itself may be morally agnostic, but as William H. Williman has keenly observed, the Gospel of Jesus has very few interpretive allies.

1.1. Why the Graphical Web is Sinister

The World Wide Web must be scrutinized because using it is not optional. There is nothing outside of one's self that demands a subscription to 100 satellite channels, but the Internet is required for business, and increasingly it is also a key tool for serious involvement with religious institutions as well.

In *The World Is Far From Flat - Coming to Grips With Globalization and Its Human Challenges*, Os Guinness states "Never have more people been more anonymous in more places." Access to the Web is almost ubiquitous and nobody needs to know you're name.

In the absence of natural boundaries, artificial rules may need to be employed.

The always-on quality of today's Internet gives even fleeting compulsions of lust a chance to take root. The lies on the Internet are waiting for you in your strongest and weakest moments. In a new world without walls, frustration and slothfulness are easily exploited because there are no physical barriers to watch our backs.

Part of the reason violence on the television screen is tolerated is because we have been trained to remind ourselves that it's not real. This is not always true of television, and it is definitely not true of the Internet. Our deliberate non-sensitivity to the programming on television enables us to be effectively blind to the victims we see. In an article titled *Thinking With the Eye*, Ravi Zacharias wisely applies the words of William Blake who wrote about the distortion of the soul when we see with and not through the eye.

When JPEG support was built into web browsers in the mid-90's, photographic content became accessible even over slow dialup lines. More significant than that is that in-line graphics could be formatted on the page along with links and other content to form thumbnail galleries so that a home page serves to hook the viewer. Hoards of fledgling Web designers of all faiths or no faiths whole-heartedly adopted the method of acclimating Internet users to navigating by following visual clues.

1.2. The Virtue of Broadband

Broadband is presumed to benefit mankind by expanding possibilities, but delay may be it's own virtue because it forces us to make choices, both in the design of applications and in the use of other technologies that are bidding for your attention.

Faster Internet connections encourage us to flip through media instead of finding exactly what we want and then downloading it. Think about the profound difference that might exist between

the movies you pick to be delivered by mail and the movies you might preview immediately on your own screen. Content can, and will be delivered in high definition. The result will be addiction to perverse material that is harder to starve.

The bandwidth available over slow Internet links act as a physical limitation that asks site designers and authors to describe the substance (and requirements) of the content they are publishing. As the limitation of bandwidth and throughput lessen, the prevailing practice will be to embed all media so that we simply browse everything.

Exercise caution if you tend to attribute your proper behaviors to personal integrity and not to natural boundaries that have been acting on your behalf. "High-speed" Internet connections are quickly removing external constrains that had previously come to the aid of whatever sense of discipline we possess. In *Book II* of *Institutes of the Christian Religion*, John Calvin observes this phenomenon whereby mankind is kept from acting out every desire by the restraint of shame, fear of laws, or even value for the dignity of his work. He concludes that "God, by his providence, curbs the perverseness of nature, preventing it from breaking forth into action, yet without rendering it inwardly pure."

I hope someone has been pondering the origin of human lust, but if we are concerned with the condition of the human heart we also should value the external means by which discipline and literate communication is deemed most conducive to our interests.

1.3. This Malady of Curiosity

In *The Confessions*, Augustine observed that "I have had experience with many who wished to deceive, but not one who wished to be deceived". Why is it then that preaching the truth to people generates hatred? He explains the resistance to the light of truth in this way: "Since they are unwilling to be deceived, they are unwilling to be convinced that they have been deceived. Therefore

they hate the truth for the sake of whatever it is that they have loved in the place of truth." He was certainly not referring to the tricky effects of imaging but he's getting close to the reason why images that are humiliating to someone else interest us–even if the photos are fake.

In the right frame of mind it may be possible to interpret any JPEG, but judging images with mind and conscience is enormously taxing, and therefore it is safe to assume that we simply won't assess what we see. If we cannot spare the energy to discern what we see, who can say that an entire generation is not being led by their eyes? Augustine continues:

> Thus, thus, truly thus: the human mind so blind and sick, so base and ill-mannered, desires to lie hidden, but does not wish that anything should be hidden from it. And yet the opposite is what happens–the mind itself is not hidden from the truth, but the truth is hidden from it.

The Web is aspiring to be an all-seeing eye, but without an upright heart and wisdom it's viewers are actually blinded. In this way the Internet takes as it gives. In David Lean's film *Lawrence of Arabia*, a photographer documents an ambush of a train and it's passengers when he's confronted by the local Arab tribal leader who grabs his box camera and demands to know if his picture is in there. When the photo-journalists admits that he did take his picture the Arab king smashes his camera to pieces against some wreckage. Observing his disbelief, Lawrence does him a favor by telling the journalist "He thinks that you have stolen from him."

In the context of the Internet, privacy is not a feature of a web site, but problem of human behavior. Our legal right to take pictures is very broad, but we should be utterly scrupulous in the selection of photos that we store on a public server. We should not take every picture we see, we should not keep every picture we take, and we should not share every picture we keep. Digital

imaging is not inert; it lends itself to all of the worst features of idle curiosity, what Augustine called "This malady of curiosity":

> From this, then one can then more clearly distinguish weather it is pleasure or curiosity that is being pursued by the senses. For pleasure pursues objects that are beautiful, melodious, fragrant, savory, soft. But curiosity, seeking new experiences, will even seek out the contrary of these, not with the purpose of experiencing the discomfort that often accompanies them, but out of a passion for experimenting and knowledge.

2. Morally Ambivalent Protocols

Most common applications delivered over the Internet run over TCP (Transmission Control Protocol) which uses source and destination "ports". Public network services can be run on any port, but each application is assigned an official or unofficial port number.

22	Secure SHell
80	World Wide Web (HTTP)
143	Internet Message Access Protocol
119	USENET News Transfer Protocol
194	Internet Relay Chat
443	Secure HTTP (SSL)

Web browsers assume that a Web site is running on port 80, but you can type the port number as well so that `http://nojpeg.org/` and `http://nojpeg.org:80/` are the same.

NNTP (News Transfer Protocol) started out as a mechanism for trading news or commentary, but with the addition of *binary* attachments it became a method of distributing porn on the Internet. It was easy–all you had to do was subscribe to `alt.binaries.whatever` on your favorite news servers and wait for the stuff to come in every day. Five years ago I would have

been weary of this protocol since news servers carried massive quantities of smut, but today many of the remaining public news servers are text-only, and therefore not very useful in distributing media to the masses.

By blocking ports on a home or business router, access to those protocols that enable unwanted applications or content can be restricted. One objection that may be raised here is that people, not the technology are to blame, so it's silly to condemn a protocol as if it were some kind of moral agent. This argument misses the point, which is that a neutral protocol introduces carries benefits and difficulties to the user. The purpose of shaping access to the Internet is not to create a form of censorship that enables some people in power to police the rest of us, but to enable individuals, families, or organizations to force the Internet to do what they want it to do, and to prevent it from doing things they do not want it to do.

Some technologies that seem innocuous have a hidden cost. Instant messengers, for example, are network applications that may be expensive not because of content that's good or bad but because young people have the tendency to fritter away large chunks of time with it. TCP port 5190 is not good or bad, but if ICQ is replacing a conversation with your neighbor or taking you from work or study then it is not on your side and should be considered an enemy.

2.1. Self-Imposed Restrictions

The concept of imposing artificial boundaries in order to accomplish specific ends is not a unique idea. A *discipline* is a system of rules and trained practices that are intended to increase a person's enjoyment of and capability in a particular craft, and sometimes that means ruling out some options to focus one's attention. Even creativity depends on developing a suitable and right structure for categories of thought. The following examples are intended to demonstrate that the construction of limits is a sound principle for

accomplishing specific ends, and as such is a useful concept in our approach to the Internet.

Poetry

In his introductory remarks to *The Innkeeper*, John Piper noted that an essential discipline in poetry is to lock one's self into form. By narrowing the constructs and the themes within his work, a writer labors to sound a series of notes that harmonize. Just as improvisation in music requires a concrete understanding of chords, so a poet imposes rules on his words that make them resonate.

Public Discourse

Today the default position is to assume that a digital projector is required for public speaking. The major theme here is that something about communication works differently now than it did for thousands of years previous because we're a visual generation and we have a short attention span. Even if this is true, the perceived value of a projector needs to be weighed against the way a speaker interacts with his audience and the message he is delivering.

For many years R. C. Sproul has required that his students leave their notes behind when they practice a lecture because there are triad-offs inherent in the use of a sermon script. Just as creating a coherent manuscript carries ancillary benefit, so leaving that same script behind forces the teacher to tighten and internalize his message to a higher degree.

Computer Science

A computer may be defined as a special kind of state machine. Unlike more linear machines that are implemented in circuitry, the software written for computers is typically very difficult to reason about–that is it may be impossible to demonstrate that a given input will always produce the same result. In his paper *The Problem with Threads*, Edward A. Lee demonstrates that it is impossible for automated regression tests to find all the errors in

some kinds of programming.

This problem is due in part because of *mutation*, or the ability of a running program to change the values of variables. It turns out that if you remove the ability to change the value of a variable once it is declared, a massive subset of theoretical principles can now be applied to the code that composes software. By removing a major feature, namely *assignment*, programming languages like ML or Lisp enable the programmer to construct functions that are governed by the laws of logic and mathematics. Many implementation details still prevent pure mathematical reasoning, but a given set of conditions now result in guaranteed execution.

Typography

Today's tools for typesetting documents have taken most of the labor out of the composing a page of text, but in many ways the challenge of the craft moved from manual labor to mental rules that each designer has to refine in his or her own mind. A huge selection of font families and even font effects not only fails to aid the common person in design, but it encourages the production of visually disorienting documents.

One of the first things a love of type will produce is the formation of principles and of combinations intended to save even one's self from basic committing common errors. Kevin Woodward, author of *redsun.com* published this guideline: "A well designed page contains no more than two different typefaces or four different type variations such as type size and bold or italic style."

It's not impossible or illegal to include more typefaces or variations, but the level of difficulty in adding fonts while maintaining readability is raised by some order of magnitude in proportion to the number of fonts that are introduced.

The Web

To my knowledge nobody has figured out how to capture a conversation or an interview from an audio magazine in an image. In the absence of a visual preview the publisher is forced

to do something sensible, namely:

1. Assign a meaningful title and/or a short description
2. List information on the length of the broadcast and it's file size
3. Include a link to the recording

Photos, videos, and animations can be thrown up without explanation or request, but they should be treated in the same way as audio. This is a self-imposed limitation, but a limit that forces the use of meaningful communication.

2.2. Controlling the World Wide Web

Of all the applications on the Internet, the most problematic is *The Web*. Because it is so popular many people think that the Web *is* the Internet. When a café or hotel advertises "free Internet" they may in fact mean "free Web access". It's not uncommon to find access limited to web traffic because they figuring that the Web has everything you need. The Web is *the* venue for accessing and distributing content on the Internet today. It is very useful, very dangerous, and also a requirement for most Americans if they want to be productive.

A variety of firewalls, Web proxies, and PC-based content filters are available, but to my knowledge they all bluntly prohibit access to sites that are deemed "unsafe". This approach is flawed in at least three ways.

First, denying access is the best way to tempt and provoke a human being. Throwing up a big red label that says "Access Denied" or "Prohibited" is a taunt that dares the individual to try to break through. Second, there are times when we might want information from tasteless sites without being bombarded with the graphic content there. Third, Web filters are universally sold as "parental controls". I cannot even conceive of a grown man moving his "safety level" control from **Administrator** to **Family Safe**. This paradigm is wrong, and should be changed to indicate a transision from **Twisted and Annoying** to **Smut and Advertisement Free**.

I am convinced that the way to suffocate salacious material on the Web is not to block access to sites, but to disable the visual material that make those sites interesting to a fallen human being. The two mediums that seem most capable of bypassing our cognitive judgment are photos and videos.

Before specific media can be obscured, a mechanism for recognizing that media must be employed. In Windows the type of a file is indicated by it's *extension*, that is the last three characters in it's file name following a "dot". For example, a filename ending with `.mp3` would be opened by an application that plays MP3's. HTTP [the protocol the web is built on] doesn't work this way. Instead, the Web server you access tells the Web browser what to do with the data it's receiving by labeling it with a *MIME type*. An MP3 file will usually be sent with a header with this type:

```
audio/mpeg
```

So dealing with nearly all photos and videos is as easy as changing the representation of the following types:

```
image/jpeg
application/x-shockwave-flash
video/*
```

There are many video formats used on the Web, but we can remove all of them because there is no compelling reason to embed or link directly to videos, and there are a multitude of good reasons not to. Does this mean that we can't distribute videos over the Web? No, it means that we employ better mechanisms of distribution.

Dealing with videos is relatively easy. Getting rid of JPEG images while on the Internet is a challenge, but the benefits are fantastic.

2.3. The Injustice of Censorship

To simply any argument about access controls, start with two simple concepts: (1) other people have no warrant for censoring your Internet access, and (2) you have every right to censor your own connection.

Based on these two premises, it follows that an elected government cannot prohibit you from setting your own firewall rules since you own what you pay for. It also follows that the introduction of state policies for Internet access effectively subjects one group of citizens to the preferences of another group. The consideration of government filtering is an invitation for welcome mob rule because any level of content censorship may be used to silence religious and political views that are not favored by the majority in power.

The kind of restrictions an Internet access providers can impose is closely related to the services agreement they provided the customer when they subscribe. *Internet access* implies IP (Internet protocol), and that says nothing about what kind of applications you can run or what kinds of communication you use it for. It is government's role to enforce lawful trade by making sure the service agreement matches the service the company sells.

If someone is engaged in illegal activity using the Internet, they should be prosecuted according the laws of the land, not blocked. All commerce is subject to some sort of regulation by the government, and paperwork must be filed to demonstrate compliance with the law in it's dealing with it's employees and the public. Therefore, if a porn site is run from a country such as the U.S.A., they are also subject to it's national and local statutes. The government should not impose policies on network providers to block access, it should require accurate records of the use of it's victims, including citizenship, age, pay, proper health care, and so on.

Investigators and lawyers have an incredible advantage in

building a case against anyone who abuses women and then publishes their actions through photos or videos. This it not pornography, it's a wealth of forensic evidence and documentation of violence. For example, why don't lawyers make those advertising women in "bondage" prove to a court that descriptions and photos of bondage are not real? In such cases, every investigator who brings evidence of coercion and abuse should benefit from the payout for fantastic damages.

2.4. Imaging Technology and Nutrality

Technology enthusiasts frequently make the mistake of trying to solve all possible variations within a specific problem space with a single paradigm. In modern times, XML has been treated not only as a document format but as a universal data format that gains "meta" capabilities when combined with a *document type defenition*. Researchers who envision a "semantic web" seem to presume that since a schema that is formal, it is also unbiased and therefore must be neutral. This is absurd since the presence of a data structure imposes the very categories for relating and describing content.

The data structures and compressor-decompressor used in each imaging format are also far from neutral; each format favors specific usage patterns that follow a predetermined path based on their underlying technology. The hight of this trajectory is based on numerous political variations, but the direction is predetermined by a single architectural decision about weather to build on precise or approximate compression algorithms. The Joint Photographic Experts Group changed history with a standard released in 1992 that defines a graphic format capable of mathematically describing a visual approximation of the original bitmap.

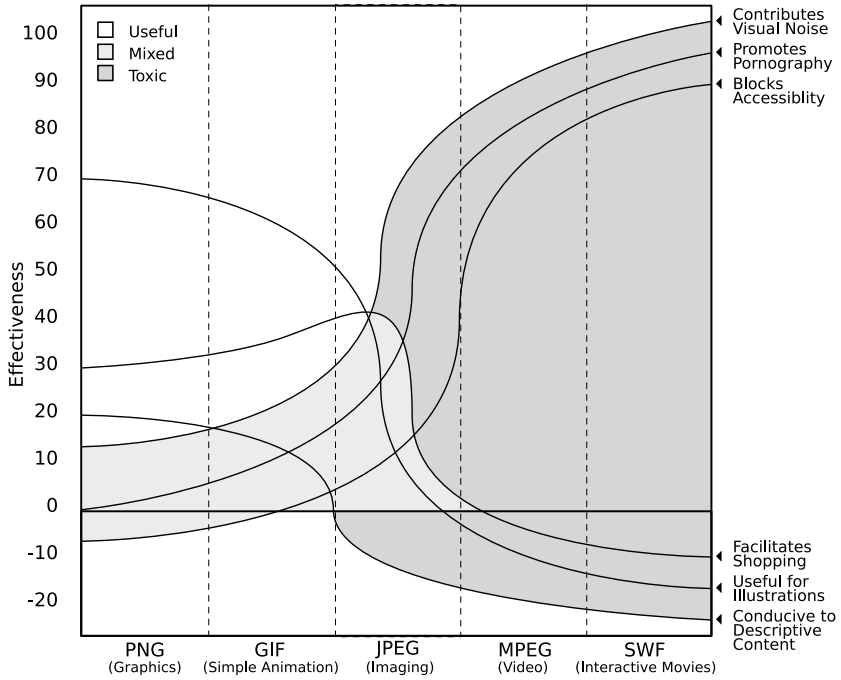

Diagram 1. Potential usage patterns for popular graphic technologies.

PNG only supports lossless compression, which simply means that it is encoded with an algorithm that preserves an exact bit-for-bit reproduction of the image. It's a flexible format that easily handles illustrations and other high-contrast graphics, but produces large files when storing photographic data. GIF is an antiquated image format that will probably fade away, but it continues to allow people to embed pictures that play crude frame-by-frame animations.

In this depiction the most conflicted and pivotal technology is clearly the JPEG. Since it is a highly efficient format for displaying photographic data on web pages, it provides an almost effortless means of disseminating images, but suggests very little

about how it should be used. The intersection between beneficial and detrimental use is the reason why any approach to sanitizing graphic content also must incorporate some method of allowing exceptions.

On extreme low-end of usefulness is embedded video or Flash (SWF) movies. User interface specialist Jakob Nielsen of *useit.com* is right when he asserted that "About 99% of the time, the presence of Flash on a website constitutes a usability disease." Flash is also becoming a dominate mechanism for distributing pornographic video and advertising today since it provides a complete mechanism for streaming high-compression imaging, video, and scriptable/interactive vector graphics, although at the expense of heavy CPU and bandwidth utilization.

When used as a adjective, "potential" is often used to describe something that is possible, but as a noun it refers to the inherent force it something will exert to obtain a particular state. In electrical theory, voltage is described as a *difference of potential*, and this is a good way to think about the potential of any given technology because they not only provide capabilities, they also suggest a pattern for the way they are incorporated.

3. Combating Idleness with Knowledge

Many people are for education about the Internet, and computers in general, but we are typically satisfied with functional knowledge of current destinations and activities. In *Logged On and Tuned Out* Vicki Courtney suggests that children are naturally "savvy" and that they learn technologies simply by using them. Learning the mechanical workings of the Internet requires study, and the manipulation of symbols that we call *computing* can only be understood once a foundation of formal science and language is established.

Computers are not generally very useful for children be-

cause the abstract nature of software is only comprehensible in combination with literacy in English, logic, mathematics, and even physics. If concepts such as grammar, structure, space, and change are not taught before introduction to a computer, then children learn behavior by trial and error rather than learning cause-and effect relationships by way of reason.

"Surfing" and "browsing" are terms that describe idle exploration and are the opposites of diligence and creativity. Today, the Internet is considered to be essential for a child's education, but a level of maturity and discipline is required to make it into a useful resource.

3.1. Learn to Solve Problems

Sometimes parents admire their children for being well-adjusted when in fact they may just be lazy. Instead of using the computer to solve a problem, children are encouraged to use search engines to look up the answer. Use conversion between Celsius and Fahrenheit as an example of one way the Internet makes learning more difficult.

$$°C = (°F - 32) \div 1.8$$
$$°F = (°C \times 1.8) + 32$$

Solving the problem while armed with a formula may be harder than searching the Web for "temperature calculator", but without a deep interest in the subject matter, the Web offers many such means of finding information without learning anything.

Take this one step further in to the realm of actual computer literacy. Instead of punching each problem out in a calculator, why not build the function and then use it? Any of the many programming languages that supports an read-eval-print loop is well suited to this task.

First define a function in your favorite interpreter.

```
def to_celsius f
 return (f - 32) / 1.8
end
```

Now test various values to see the relationship:

```
>> to_celsius 72
=> 22.222222222222
>> to_celsius 212
=> 100.0
>> to_celsius -10
=> -23.3333333333333
```

Diagram 2. Solving a simple problem in Ruby

As a giant how-to repository, the Web functions very naturally as a productivity resource, but real comprehension and learning require much more personal discipline. Why read the documentation when you can just search for an example? Instead of study and imagination we just copy and paste snippets of code, quotes, and images.

If you agree that we are suffering from a lack of true reflection then you should also agree that some of us need some external assistance in cutting through the visual noise of "content" on the Web so that we are able to be still long enough to digest what we read.

3.2. Useful Elitism

By definition, not everyone can be elite, but for some there is significant benefit to developing a skill-set that prides itself in commanding technology, not being amused by it. Those ignorant of technologies tend to be fascinated by whatever is new, but those who have developed a craft do not tolerate shoddy implementations. Those who love creating intelligible software are not interested in magical properties, but excellence in form and function.

Principled, concrete knowledge of technology is not inert; it creates a mind that cannot be bullied or tricked. The correlation

between understanding and our will is direct, so that the deprivation inherent in technology that hisses and spits is as repugnant as the un-artful content it may carry. The key here is to see that people who are in the business of "entertainment" or "adult interest" are as filthy in their use of technology as they are in their use of humanity.

Craftsmanship in the design and implementation of computer systems results in a visceral relationship to system integrity. The temptation to get free porn by installing weird programs from an unknown source is absolutely not an option to someone who's concerned about security. The religious and non-religious alike may happily distribute media that requires compromising software, it will never be used by someone who loves great technology.

Another useful aspect of elitism in this field is that it tends toward hardware that smut can't be played on. Visual media on the Internet is often encoded or distributed in a way that assumes an operating system that runs on Intel's i386 architecture, while "hard core" users, system administrators, and programmers use bio-diverse systems which companies obsessed with intellectual property will not support.

3.3. Accessibility

We habitually misappropriate the Web by hampering it's most embracing feature; namely that content should be accessible without respect to the disabilities of the user. HTML, the document format of the Web, excels at providing usable access to information to peoples of every location, economic class, and physical impediment.

To view the Web as an artistic medium, which it's ill suited for, while ignoring the ability to separate content from presentation is to fundamentally misunderstand the Web. Some say that the freedom to create badly designed web sites is one of the reasons

it's such a success. This may be so, but we should spend a little effort to understand the accessible features of the Web so that it usable.

PDF and PostScript documents are not specifically intended for access by the blind, but as long as text is not converted to outlines and the formatting is not complex it can easily be viewed as plain text that any screen reader can process. An added benefit to this approach is that search engines can index them, and user's can jump to specific phrases.

The easiest way to test for a site's basic usability is to view it in a text-only Web browser; this will catch the majority of design flaws. A second step is to use an accessibility validation tool such as `http://www.cynthiasays.com/`.

Churches that claim to meet people in all walks of life tend to be among the most hypocritical at this point by designing their site to be functionally display-driven, not content-driven. Religious groups trying to be relevant are only interested in media-centric sites only intended for their target audience. This discriminates against three broad groups:

1. Men of faith who use the Internet frequently for their work, and do not want to be distracted by all of it's time-consuming lures.
2. Those who only have access to slow Internet connections or and older computer.
3. Visually impaired individuals who make use of screen readers or a Braille terminal.
4. Anyone who has difficulty scanning for visual clues or sensing dynamic changes to page structure.

Any Web site that requires high-compression media, platform-specific extensions, or a scripting language in the browser has destroyed the Web's most power paradigm by trying to change structured documents into a fluid user interface. In the first case rules are applied to a render content, in the second case

static analysis is not possible, thereby precluding alternate modes of display or means of interaction.

The Web has worked so well for people in part because it's limited interface controls prevented programmers from becoming overly creative with the visual environment. Today *client-side scripting* and *plugins* have undone that progress by introducing "immersive" environments that can mutate in non-obvious ways. In addition to high CPU utilization, this visual model incurs a delay in comprehension where the dominate activity is scanning, not reading. At least one modern web browser, at `http://www.dillo.org/`, is responding to this regression by re-examining a forgotten goal: information access.

3.4. The Aim of Computer Literacy

Overwhelmingly my experience demonstrates to me that children and adults alike understand less about computers than they did fifteen years ago even as the quantity of time spent on computers has grown. There is a vocabulary to using a computer, and this vocabulary is the means by which we can think about our volition.

In a *shell*, the user issues an instructions with parameters and expects a result. In a *graphical user interface* the user interacts with a layer of visual clues until he or she is familiar with common results. The literary barrier to most graphical environments is primarily experience and particularly trial and error. The literary barrier to a command line interface is documentation, commonly referred to as *man pages*.

The difference in learning these two basic types of user interfaces is most significant not in capability, but in the habbits and process they encourage. The visual paradigm of exploration sets up the user as a consumer that hopes for abstract results without knowledge of the process, or even a clear notion of what the right result would look like. At a command line, he or she must learn

what result he or she wants, and then how to do it.

Suppose someone receives a file named `greek8`. What is it? Most people double-click on it and hope that something happens. If someone is familiar with a shell he or she will find out what the file is, and then act on that knowledge.

```
% file greek8
greek8: PNG image data, 552 x 411, 4-bit colormap, non-interlaced
```

Now that the we know what the file you know what it is, the use their favorite picture viewer to see the picture.

```
% feh greek8
```

The user interface is tightly connected with a person's understanding of what it is they are asking the computer to do. Double-clicking essentially means "do something", and even if the computer does what they wanted it to do, they still don't know what kind of a file an icon labeled `greek8` represents. Even a child should understand that the icons they see don't really represent pictures but rather image data that has specific dimensions, specific color space, and specific encoding.

Bill Gates describes software as the "magic" makes the accomplishments of modern computing possible, thereby implying that people of all ages are to leverage software, but we don't control it. The value of computer literacy then, is that it proves that computers, and even the Internet can be made to serve the objectives of the human who gives it instructions.

4. Images Are Like Photographs

Any thinking person living in these times is able to pick out relativism, but narcissism is equally pervasive and can be hard to discern in the methods and technologies we use. Digital imagery has meshed flawlessly with popular ideas in Web design to re-define what we mean by the term *photography*.

4.1. Talk of Light

Some photographers are uneasy about digital photography because it has implications that they don't understand–or can't articulate. One man on *choose-film.com* complained that "Digital images are too smooth, too 'plastic'. And everyones busy trying to reduce noise even more!" Another asserts that that being a photographer means to "talk about light", and that film "keeps me real".

The set of technologies we call digital photography is very unlike photography in that human perception of images may be altered by erasing the influence of time. The traditional process of capturing and developing a photo is strictly a time-bound process, but digital imaging technologies and post-production software create something different because the image is not the imprint of light from a specific vantage-point at a single time and place.

High dynamic range imaging is a broad set of techniques that has developed along side digital cameras to produce photos that are sometimes described as simultaneously unnatural and beautiful. One technique is to take a series of exposures in succession that are then merged to create a composite that displays intensity levels not found in real lighting. The reason this is a twist on time is because even if all the optical data was gathered within one second, the photo is the product of compressing several discrete events into a representation that appears to be a single moment of time.

In one scene my wife photographed, she picked flowers and tossed them into the shallow water along a stream. She could have taken pictures of flowers and scattered them over the surface of the water using only software, but she would not have taken a photograph, she would have created an image. Digital tools are not different means to the same end, one is the capture of light from outside, and the other is imaging.

4.2. Mind-Numbing Bitmaps

A large, if not primary use of web-logs, user pages, and social networking sites is to display an assortment of things that serve as the mark of one's self. Photos of anonymous people, body parts and textures, may be altered, merged, and isolated in an endless number of ways without a clear purpose. There probably are messages behind the vast number of composite images that fill the web, but a constant diet of garbage does not aid discernment; instead it blinds the senses.

If exerting creative effort by editing digital images is too much work, the narcissist within may feel that the mere act of copying a JPEG without a place, without a name, and without a time is sufficient to express one's self. After all, I/myself have chosen! Designers of corporate Web sites all learn the same tasteless habit of plastering human images on every page because they think we want to see faces everywhere. Stripping pages of photos and movies cuts through all of this clamor so that the viewer can get at what, if anything, the self-publisher has to say.

Engaging culture is not the same as consuming culture, and because plastic images of people and gaudy graphics are difficult to digest we are quickly glutted. Removing noise is the first principle in the acoustic engineering of a building since it allows people to hear. In the same way, removing visual noise from a computer screen frees logic and intuition to listen without the insistent clamor of those who say nothing loudly.

4.3. Art Without a Medium

The argument herein for giving written language preference on the Internet only sounds drastic until we realize how very little one might be giving up in making this shift. This is partly due to the fact that otherwise talented people are rarely able to press the presentation of visual media on the Web beyond mediocre standards. Blocking embedded media players and images elim-

inates a mass of sickly art at the expense of a small quantity of great work.

The means of production and mode of display is tightly connected to any art-form, which means the beauty of a craft is not easy to reproduce on a glowing screen. One reason art in our day tends to be tasteless and trite is that our mechanisms of mass distribution reduce all creativity to digital images, along with a corresponding indifference to how well the medium approximates the subject in the mind of the beholder.

An artist who doesn't care how his or her art is presented doesn't value their own art, and the usefulness of the Web as a medium for publishing a photo, a painting, or even an architectural illustration depends on how well suited the subject is to this kind of digital distribution. Good design always leverages the mechanical nature of the materials it works with. Take corporate identity as an example: the graphic artist who designs a logo or trademark must understand the limitations and features in the means of reproduction, which often in may mean solid fills and one or two colors.

Distributing visual material on the Web is tempting because it seems like the ultimate venue for maximum dissemination, but dissemination of what? Does it really represent the craft? Even if the media lends itself to a computer display, every significant property is variable and radically so.[1]

Video is produced with a cathode ray-tube tubes in mind, so it may have a better chance of surviving variations in displays, but only if the picture quality is not destroyed by severe compression and scaling when it's encoded. At the moment all forms of streaming suffer from gross artifacts, and are not worth seeing. My recommendation for video and other large data files is to skip

[1]Variations in display technology include, but are not limited to pixel resolution, texture, black point, gamma correction, color temperature, saturation, aspect ratio, diffusion, and even scaling interpolation!

the web altogether and use a peer-to-peer protocol. Typically this works by downloading a tiny meta-data file that contains information about how to download and assemble the file from other computers on the Internet.

4.4. Resolvable Information

More advanced media capability in web browsers enables the delivery of more content, but past at a certain point interactive graphics or video does not add information. To the contrary, some visual input or feedback detracts from useful perception and reasoning where well formed language is replaced with imaging and stylized text.

The image-centric formatting we know today nearly always functions as a wild-card that neither affirms nor denies the mission, philosophy, or identity of the author or organization that a site represents. Business and non-profit web sites often lead with images and animation because they do not have a compelling story to tell, or even the clarity of mind required to explain what they represent, and what they don't.

An additional level of deterioration occurs when the syntax of language and notation is personalized and customized. Hyphens are not interchangeable or in any way equivalent to periods! Basic adherence to syntax is the foundation for comprehensible semantics, and therefore language itself.

Both of these half-hearted attempts at art demand more of the reader because content designers add visual media to create a starvation of resolvable information. Sound does not travel through a vacuum, and I maintain that removing high-compression graphic content is the best means of prioritizing written language as the preeminent media of the Internet.

Appendix A. Special Hazards in Microsoft Windows

An entire class of nasty opportunities are available only to Windows users, including executables that are be installed as plug-ins from a Web page. The MIME types of these embedded players are numerous, but usually start with `application/x-`. If you must use Windows the only solution is to so abhor parasitic software that the bate has to be better than shallow allurements. Windows makes the distribution of "webcam" software and "adult games" easy because it lacks genetic diversity.

Genetic diversity among computers is similar to biodiversity in the way that variations in DNA protect a species as a whole from a single blight, and thus survivability depends to a degree on the lack of sameness. Architectural diversity in software produces an environment where a single machine-dependent binary cannot be distributed to all computers because it has to be re-compiled for each generation of operating system and CPU. Another benefit to genetic diversity is that it quickly eliminates software that isn't actively maintained. Any code that is not re-built and tested on new architectures is generally no longer being purged of it security flaws or bugs in run-time behavior. The best result of diversity is that the user is forced to understand something about what they download and run instead of just "clicking".

Appendix B. Informative In-line Substitution

It is easy to downgrade the status of JPEGs and other media using a filtering HTTP proxy to substituting a blank image, but this method has several drawbacks:

1. If you want to unblock some media, you have to plow through the HTML or JavaScript source to find the domain they're served from.
2. `<img>` tags don't always have `width` or `height` parameters, which often breaks layouts.

3. It's not always obvious what kind media is now displayed as a blank image.

One solution may be to implement an application-layer gateway that uses the image header of blocked formats to generate a PNG that will be sent in its place.

Diagram 3. Advertisement as it might appear if replaced by media filter.

Appendix C. Tools Under Development

http://eradman.com/

`media-sanitizer` is a fast redirector that can work with an existing proxy. Replaces irritating graphics with a transparent PNG based on user-defined rules.

`prdr` is an effective firewall utility that politely indicates how to adjust environment variables or browser settings to use a Web proxy.

`http-bandstop-filter` is an experimental HTTP gateway intended to filter based on MIME types (see *Controlling the World Wide Web* on page 11), and perform real-time content substitution as described in Appendix B .

Appendix D. Motive for This Resistance

no-jpeg.org is a temporary claim to territory previously held without protest or question by those who worship human progress. It is a flag on a hill placed by one follower of Jesus who is concerned with discerning the effects of high-compression digital imaging

on the minds of fallen men.

Gaining and keeping this territory is much to difficult for one or more men, yet it may be easy practice for those who's higher summons is to be found ready. Those who keep the midnight watch will not pine for familiar things when this post is abandoned, but will discover that every difficulty was meant to prepare them for the day of the Lord's return.