Transparency in Interactive Entertainment

by

Mark Barrett

Foreword

This document attempts to focus the interactive designer's thoughts on basic aspects of entertainment. The aim of this focus is to ensure that the designer's work creates and sustains imaginative involvement for the player.

In crafting this document I have tried to articulate and debate the essential points, but an occasional aside or additional explanation seemed warranted. These tangents are dealt with in the end notes referenced by number in the text.

If you believe this document would be of help to anyone, please feel free to pass it along, provided that it remains unaltered and in its original form.

I would like to thank Jurie Horneman, Lee Sheldon and Chris Crawford for sharing their thoughts on the design of interactive entertainment over the past few years. Their independent deliberations significantly sped my understanding of the issues involved.

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5/24/99

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Part I: Defining Interactive Entertainment

The house lights go down and a shimmering spotlight flares. The curtain slowly rises, revealing a man in a black tuxedo and top hat standing next to a small table. With a flourish the man takes off his hat, shows the inside of the hat to the audience, then places it top down on the table, centering it just so.

A drum roll grows in intensity as the man rolls up each sleeve, shows his bare arms to the audience, then turns to look at the hat. He pauses, concentrates, then plunges a bare arm into the upturned brim, struggling violently with something inside. He pulls his arm free, his hand now holding a kicking rabbit. A cymbal crashes and the crowd applauds.

The Audience's Role

A good demonstration of any craft is certainly worthy of note, but the first observation we should make here concerns neither the magician nor his trick. Instead, we need to focus on the members of the audience, and on the fact that they were so clearly pleased by what they saw. Pleased, despite the fact that only the youngest among them believed that the magician actually materialized a rabbit out of thin air. Yet without reservation, and despite the fact that almost everyone in the audience knew that what they had just witnessed was an illusion purely designed to deceive them, they still applauded. Why?

The answer is that the audience was entertained by wonder, which was in turn driven by an inability to explain what had just been observed. Yet contrarily, *how* the trick was done - the actual mechanics of the craft - was of little genuine interest to the audience, except to those members new to the world of illusion, or those interested in practicing the craft themselves. For the greater majority, who at one time or another had destroyed a similar experience by insisting on knowing how a trick was done, their ignorance was *willingly* self-imposed.

The audience's reaction to the magician's trick, then, is the product of the magician's skill and the audience's own willing suspension of disbelief. And it is exactly this cooperative relationship between entertainer and audience which is the cornerstone of any medium which seeks to entertain by involving the audience's imagination. This includes, specifically, interactive entertainment.

Interactivity and Magicianship Defined

But isn't interactivity different from magicianship? Isn't it in fact different from all forms of passive[1] entertainment, which are themselves wholly predicated on magicianship? The simple answer is yes, but there are important distinctions to be made here, and a few terms which must be closely defined.

Interactivity and magicianship together are the two component parts of almost all works of interactive entertainment. *Interactivity* occurs when a computer user interacts with a computerized simulation of a process (combat, trade) or a machine (plane, car), *and* that interaction determines an outcome, as opposed to simply revealing one.[2] *Magicianship* is the partnering of audience and entertainer in an imaginative experience, and it is the foundation of all forms of passive entertainment. In interactive works, magicianship represents all of the non-interactive elements of a product. Not surprisingly, these non-interactive elements are often the aspects which most affect the player's emotions.

Interactivity - a fundamentally logical process - is almost never used exclusively in works of interactive entertainment precisely because the relative absence of magicianship means the product will not involve the imagination.[3] Only the most abstracted games, such as Chess or Go, produce a product close to pure interactivity, because they make no effort to entertain by means other than engaging the player in rational thought. Chess does not take place in alien lands or use characters to engender empathy, or in any other way seek to influence the emotions of the audience with images or sounds. Only in games like Chess is the designer free from the need to harness and master magicianship, because no involvement of the imagination is required or expected. (For more on how Chess and Go do provide clues about deriving emotional involvement from interactivity and game mechanics, see: Chess Lessons: the Z-Axis of Interactive Storytelling.)

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[1] At various times I have been taken to task for using the term "passive" to describe other forms of entertainment, with the usual complaint being that movies, books and theater are far from passive experiences. This is of course true from the audience's perspective, where an individual member may express themselves in any number of ways, from laughter to tears or jeers to applause. My use of the term "passive", however, is not focused on the audience's experience, but on the designer's. From this perspective it is clear that these mediums are indeed passive because the playwright, author, or screenwriter need make no allowance for audience involvement in their works. While there may be an allowance made in the pacing of a film in anticipation of loud applause or laughter, the fact remains that the creators of all other forms of entertainment need make no accommodation for audience input. This is *the* critical distinction between the design of interactive entertainment and the process of creation in these other mediums, and it is with this strong emphasis and distinction in mind that I use the term "passive".

[2] The difference between real interactivity such as the guiding of a simulated airplane through three-dimensional space, and the false interactivity of selecting lines of scripted dialogue in an RPG, is not always clear. The determining factor is whether all logically-consistent choices are actually available to the player. Since the pilot of a simulated aircraft has freedom of movement in all axes, such that all possible points of the space being simulated can be navigated, then the act of flying the plane is genuinely interactive. Contrast this with an RPG where, for a variety of reasons, all logically-consistent potential plot or conversation choices cannot be offered. In situations of the latter kind limited selections are offered, with the result that these selections necessarily only reveal pre-designed or pre-scripted outcomes.

[3] If this statement strikes you as incendiary, or just plain wrong, I can only ask that you stay with me a while so that I might make my case.

Also, where interactivity is an aspect of design, and a description of a computed process taking place between computer and user, "interactive entertainment" generally references any form of entertainment taking place on a computer. This does not mean, however, that all interactive entertainment is actually interactive as interactivity has just been defined. There are any number of products which are routinely classified as interactive entertainment which contain a very limited amount of actual interactivity. In fact, one entire genre - adventure games - is forced by its emphasis on prepared narratives to severely constrain the player's determinative choices, because the theoretical and practical obstacles to providing such choices are almost impossible to surmount.[4]

As mentioned, the other dominant component of interactive entertainment is magicianship. Simply put, magicianship is the craft or technique behind every aspect of a game which does not provide the player with a genuinely interactive choice. Anything which either exists to support the player's involvement in the imaginative world in which interactive choices are offered, or which acts to divert the player's attention away from a lack of genuine interactivity,[5] is by definition magicianship.

Yet this is a deceptively simple definition, because magicianship covers vast territory, encompassing many more aspects of design and production than does genuine interactivity. Whether through simple trickery such as trigger-dependent sound effects and fancifully-rendered skins, or through more complex illusions such as language interaction, or even as a result of involving the player in that most complex of magical constructs, a story, magicianship is clearly a factor in the market success of interactive entertainment titles.

Even a work as relatively sedate as an historically accurate hex-based war game assumes and generates a good deal of imaginative involvement as a result of its historical context. The player's assumption of the role specified by the game - Alexander the Great, for example - is itself magicianship. This illusory historical involvement is often further reinforced by magicianship through the use of music, period graphics, or text messages in the vernacular of the day, all of which are designed to increase imaginative involvement.

Far from being divisive, the distinction between interactivity and magicianship allows us to understand how all of the products which make up the interactive industry relate to each other. The adventure game genre, with its heavy use of magicianship, simply marks one end of a continuum. Games like chess, which are almost entirely interactive, mark the other. However, while certainly useful as an aid to categorization, and as a way to understand the basic elements inherent in most interactive products, this kind of analysis is of limited utility to the interactive entertainment designer.

From the designer's perspective the proportion of interactivity to magicianship is of far less importance than the successful integration of the two. To the extent that the

[4] Computers cannot reliably compute language interaction with a user, so all such interactions must be pre-designed during development. Because any conversation is complex and potentially unending, pre-designed conversations must also be limited in scope, duration and complexity.
[5] Most often this is accomplished through established passive techniques, such as the use of humor, drama or mystery.

distinction between them helps the designer more clearly understand how to approach the task of integration, it is clearly a step forward. Unfortunately, it is not uncommon for designers to assume that because interactivity is the heart of the matter in interactive entertainment, magicianship can be created and integrated last. This belief is incorrect.

Distinguishing Interactivity and Magicianship

Successful interactive entertainment is a synthesis of interactivity and magicianship. Although it is often the case that the more genuine interactivity a product has the better, interactivity remains just one of the two pillars upon which most interactive entertainment needs to stand. The other pillar, magicianship, must not be assumed to be of lesser importance.

The reason for this is that a mistake in either aspect of a game - inconsistent or false interactivity; weak or conflicted magicianship - is sufficient to destroy the player's suspension of disbelief. It doesn't matter which aspect is at fault when this happens, because the result is the same: the player is unceremoniously ejected from their own imagination, and hence from enjoying the product itself.

The most damaging mistake a designer can make on this front is also the easiest to overlook, because it springs from the designer's own preconceptions about what makes interactive entertainment work. That mistake is the misidentification of specific elements of a design as either interactivity or magicianship, when in fact they are the reverse. From the moment of conception through the last hours of production, failure to identify aspects of design correctly - or the failure to identify them at all - may in fact be more determinative of total production costs, scheduling delays, and of sales and critical response than any other single factor.

Why? Because only by correctly identifying an aspect of a game as either interactivity or magicianship can it be successfully used to support the player's imaginative involvement. If an aspect of the game is assumed to be interactive when it is not, or assumed to be magicianship when it is in fact a component part of the interactive heart of the game, then there is every expectation that the implementation of that aspect will be faulty.

Moreover, the effects of misdiagnosis may show up in myriad ways before the product is released, but never be attributed to the actual cause simply because the complexity of the product, and the designer's close proximity to it, precludes any opportunity for clear assessment. As a result, the likelihood that such misdiagnosis will be perceivable later in development, when its effects may be paradoxically most pronounced, is remote. It also means that costs associated with attempts to correct the problem will yield no benefit, and efforts to correct the problem may be directed at aspects of the game which are at fault.

Correctly identifying which aspects of a design are actually interactive and which are magicianship is the most important distinction that can be made for any aspect of a given work, and this designation should be made as early as possible in each instance. To fail to do so is to risk producing a work which is inherently incapable of supporting the

player's intellectual, emotional and imaginative involvement, which is the obligation of any form of entertainment, and should be the objective of the interactive designer as well.

Diagnosing Interactivity and Magicianship: A Case Study

From the very genesis of interactive entertainment as a medium, the meshing of interactivity with storytelling has been presumed to be inevitable. Yet despite great inroads in a number of areas, no one has been able to come up with a working model which convincingly and consistently exhibits this synthesis.[6] To some extent this is a problem which relates to how genuine interactivity can or cannot be used to invoke a narrative experience. But just as problematic is the limited understanding of reliable magicianship techniques which can be used to elicit emotional involvement from the player, and how those techniques can be wedded to interactivity.

Two recent releases, *Dark Side of the Moon*[7] and *Half-life*, have narrative aspirations, yet each starts from a technologically opposed position. To their credit they both reach as far as any products these days in attempting to bridge the gap that exist between story and game, but there are aspects of each product which still present problems.

Dark Side of the Moon uses a proprietary game engine to enable the inclusion of live actors (via full-motion video) within a three-dimensional world. This navigable world is limited by current technology to movement on rails, and panning in only one axis at a time, but it does allow the user to have freedom of movement within these parameters while including human actors within the environment. Although navigation can be slow, and the cuts from clip to clip can be choppy, and the player can be frustrated by a desire to move in directions which are not allowed, this is still more than anyone else has achieved. To the extent that it succeeds it allows a fully developed story to be realized in an emotionally accessible context, in large part because the player's ability to empathize and sympathize with the characters in the game is uncompromised.

Half-life is a polygon-based 3D shooter with freedom of movement, weapons, and targets consistent with the genre, but it raises the narrative bar in important ways. Unlike most level-based shooters, the game world in *Half-life* is treated thematically as one massive physical space connected by narrative threads, and travel through this space involves the player in a number of narrative events. These events, of which the greater are plot points in a drama which unfolds around the player, and the smaller are scripted but well-implemented cinematic moments, serve to convey a sense of place and purpose that has been missing from most other action games. On the downside there are still noticeable load times between the disguised level transitions, and the mission designs tend to favor traps which can only be figured out by getting killed – effectively revealing them to be puzzles instead of part of a seamless narrative experience.

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[6] To the extent that this goal may seem unrelated to the aims of the computer gaming industry, note that all mass-market mediums are capable of, and used for, storytelling.

[7] I co-wrote *Dark Side of the Moon* and contributed to its design. I use it as an example here only because I am familiar with it as a product, but I am conscious of the conflict of interest inherent in this association.

To the extent that each of these games moves the cause of emotional involvement ahead, to what do we owe that advancement? Is FMV, or some other way of including human actors in a game, essential for emotional involvement? Or is freedom of movement and simulation critical? Is one more critical than the other?

Although the answers to these questions can certainly be debated, it seems obvious that at some point each of these technological approaches will blend with the other, giving us a game engine which allows full freedom of movement while allowing human actors to come and go at will.[8] But how far down the road will this synthesis of technologies actually get us? Unfortunately it won't get us very far at all.

Limitations of Algorithms

The reason for this is that there are still major roadblocks to creating emotional involvement through algorithmically-determined interactivity. By far the most imposing is the need to handle language interaction in a seamless way. Unfortunately, there is every reason to believe that this problem will *never* be solved by algorithmic processes. That means that even if we assume the creation of an engine that allows the integration of human actors (or believable characters of any kind) into virtual spaces, there will be no way to genuinely interact with those characters through the use of language.

Again for emphasis: if the creation of interactive entertainment is the goal, it is critical to consciously recognize that this language-interaction limitation exists. Unfortunately, because language interaction has been one of the presumed linchpins to emotional involvement, it has been assumed to be 'just around the corner' for much of the industry's history. As the same time, non-interactive conventions have developed in lieu of algorithmic solutions, but these conventions often lean heavily on the false premise that revealing information to the player *is* interactivity, when it undeniably is not.

If genuine language interaction is *not* possible in the near term, let alone ever, then we must acknowledge magicianship as the only means by which we can create emotionally involving interactive works which use language as part of the process. There is no other alternative,[9] and assuming otherwise only exposes a project to unnecessary design risk..[10]

A second major hurdle, after we get believable human or non-human characters into navigable virtual worlds, is the question of the inherent incompatibility between storytelling (as a form of entertainment) and interactivity. Where an authorially-controlled narrative derives much of its power from pace and narrative (logical) focus, these advantages are all but lost when control is given over to the player (often through virtual movement, which is also a function of time). Because player-determined control is the essence of interactivity, however, and of the entertainment derived from it, this means that it is in fundamental opposition to many effective storytelling techniques.

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[8] These human actors may be filmed, polygonal - who knows? - but they will be in there, and they will be believable.

[9] The emphasis in this specific example is on simulated human-language interaction. The process is admittedly easier with non-realistic conversation partners, animals, interfaces, etc.

[10] If someone ever does solve the language-interaction problem, you'll know about it.

Although the handling of pacing is a serious issue in and of itself, it pales in comparison with this more basic schism between interactivity and narrative, and again technology and algorithms cannot resolve the problem. This means that the entirety of this issue – every aspect of blending narratives (themselves constructs of magicianship) with interactivity – again relies on magicianship.

To sum up, the effective implementation of two of the more commonly debated subjects in interactive design - language interaction, and the integration of story and game - must necessarily come from magicianship, not interactivity. In order to use language interaction or narrative constructs in interactive works, any game design must fully support these elements through techniques of magicianship, not through algorithms. It is probable that this impacts almost every mainstream game being designed today.

Intimations of Interactivity

A shapely assistant steps from the wings, glittering in sequins. She takes the hat and the rabbit from the magician and disappears from whence she came. The magician calls out to the audience for a volunteer and dozens of hands shoot up in anticipation. The magician scans the audience, his gaze settles upon you, and he motions for you to join him. You walk down the aisle, up onto the stage, and into the blazing heat of a spotlight.

The magician produces a small hoop from nowhere and pulls on it, testing its strength. He hands it to you and you do the same, feeling its thickness and solidity. The magician waves his hand with a flourish and produces a handkerchief. He blows his nose, then puts the handkerchief in his pocket, and you chuckle along with the crowd.

The magician extends your arm as you hold the out before you for all to see. He produces another handkerchief and drapes it over the hoop as a drum roll begins to build. The magician waves his hands over the handkerchief as you tighten your grip on the ring in defiance of the trick that is to come - and suddenly the magician whips the handkerchief away. You see dropping before you a chain of similar links now joined to the one you hold. Cymbals crash and the crowd applauds.

And here the waters get murky. Though the intensity of the experience is raised by your proximity to the magician, and by your tactile involvement, you have not meaningfully participated in the trick, or interacted with the magician in any way. The reason that this is true is because you had no influence on the outcome of the illusion; your participation was of no determinative consequence. The magician could have just as easily had his assistant hold the ring, or he could have clipped it to an inanimate stand. It made no difference to him whether you were there or not. So why invite you up on the stage?

The reason the magician asks for your help is because it deepens the illusion he is presenting to the audience, of which you are still a member. From the magician's point of view, as the designer of the illusion, there is nothing to be lost by having a member of the audience help reveal the outcome of a trick, and there is everything to gain. Not only will the audience be even more hard-pressed to figure out how the trick was done – because an audience-member's participation *seems* to limit the magician's ability to

perform the trick – but the audience will, through the audience member on stage, also gain an avenue of empathy into the illusion.

From the magician's point of view there is no difference between the audience as a whole and the one member standing on stage. But there is a tremendous difference in the experience felt *from* those two points of view, and it is the latter we need to focus on. The audience is still merely witnessing what transpires on stage, even if they feel a new intimacy brought about by having one of their own assist with the trick. But the solitary audience member standing on stage is experiencing a new level of involvement because they've been given a role to fulfill as assistant to the magician.[11]

From the point of view of the audience member on stage, everything seems to have changed. The audience member now feels they are a participant in the mechanics of the trick, that they have a special awareness of the illusion denied the other members of the audience, and that they are in a position to have an impact on the outcome of the illusion. That they feel these things is understandable. That they feel these things when they are in fact not true is illustrative of the depths to which this kind of involvement can be created without the use of genuine interaction.

And that's the point of magicianship as a craft, and as a group of techniques used in passive mediums, as well as in passive aspects of interactive entertainment. Through magicianship the audience's imagination can be involved in deep and meaningful ways, such that the audience will feel as if they have participated in the experience, even though they have had no interactive say in the outcome. This means that all those aspects of interactive entertainment which cannot be solved with algorithms can still provide, through magicianship, the desired effects of entertainment and imaginative involvement.

If language interaction and the blending of interactivity with story cannot be done algorithmically, it is axiomatic that magicianship is the route that must be followed. But it's one thing to say we need to involve the imagination, while it's another to do so convincingly and consistently. Where do we start?

Part II: Transparency in Interactive Entertainment

The Cornerstone

Anyone who has tried branching as a means of infusing a story with interactivity knows that it is usually a mistake to simply replicate passive techniques in the interactive form. The mistake is not in looking to passive forms of entertainment for solutions, however, but in attempting to import solutions without adapting them. Passive storytelling forms (movies, books, etc.) are themselves simply the sum of specific techniques, all of which inherently involve magicianship. In order to adapt these techniques to interactivity, we have to explore them at the atomic level, looking for things that can be calculated with algorithms. The good news is that once identified these atomic techniques should be

[11] Defining the player's role is a complex and central aspect of good interactive design.

useful in all interactive works, including pure shooters set in imaginary worlds to the most narratively-driven adventure games.

An obvious place to start is to see which techniques other successful entertainment mediums have in common, and which of these techniques might be adaptable to the interactive industry. Unquestionably, books, film and television, and theater have all been used to deliver emotionally powerful experiences to an audience. Although interactivity as a medium is fundamentally different because the audience is no longer passive, this does not deny the similarity of the goals: each medium seeks to create and sustain imaginative and emotional involvement for its audience.

The cornerstone of the audience's imaginative experience in all storytelling mediums is *transparency*, which can be defined as the ability of a medium to disappear from the minds of the audience, even while the medium is itself being used to deliver a message. Not surprisingly, the need for transparency is of no less importance in interactive works. What *may* be surprising is that transparency functions on two levels, either of which can fail, and either of which can shatter the audience's suspension of disbelief.

Transparency in Technology

The first objective for our new medium - indeed for any new medium - is the search for technological transparency. Ideally, whatever we're presenting to the user should not be intruded upon by hardware or technology for any reason. In the same way that a torn reel of film brings groans from a movie audience and destroys suspension of disbelief, clipping problems or pauses for the loading of new textures can keep a player from becoming immersed in a computer game. Had the magician's table fallen apart under the weight of the rabbit, the effect of seeing the rabbit appear as a result of the fall would have destroyed imaginative involvement in the magician's trick, even though the resolution - the appearance of a rabbit from inside his hat - would have been the same.

Whatever hurdles passive forms of entertainment have had to leap to ensure technological transparency, it is clearly a more complicated problem for interactive works. The sheer technological requirements for presenting a work of interactive entertainment are almost overwhelming, both because the interactive medium necessitates that the user become familiar with various input devices, and because it aspires to actually respond to the player's intentions.

Because interactive technology and hardware *is* complex, and still evolving, debates about the craft as a whole are often dominated by technological concerns. The problem with this is that it leads to an implicit assumption that interactive entertainment *is* technology, and vice versa, with no expectation that the user's imaginative involvement needs to be steered and tended by all aspects of the design, let alone that all aspects of the design need to work harmoniously, as they should.

In this light the question raised above about the melding of virtual space and human actors can be described simply as a purifying of current technology to the point of transparency: no more restrictions on physical movement, as in Dark Side of the Moon;

no more restrictions on the emotive capabilities of the characters, as in Half-life. But that technological description says nothing about how three-dimensional space and human actors can be used to deepen the player's imaginative experience.

Reaching the summit of technological transparency only shows us what cannot be accomplished by technological means. The impossibility of transparent language interaction, and the native incompatibility between interactivity and storytelling, are examples which have already been mentioned. Purifying technological transparency only moves our cause forward to the point where we can allow the user imaginative access *to* content. It says nothing about how, or even if, that content can successfully be delivered.

Transparency in Technique

Where technology allows imaginative *access* to a world, it is technique which determines imaginative *involvement* in that world. In the medium of film the celluloid and the light source deliver images to the eye, but it is the sequencing of shots and the dressing of sets and the skill of the actor and writer and director - the practiced techniques of all crafts specific to the medium - which involves the audience emotionally. This emphasis on technique is no less important in interactive entertainment, and may in fact be more so because of the need to seamlessly transition between interactive and non-interactive aspects of a game.

Although technology unquestionably continues to drive the interactive industry, it is in understanding and using transparent techniques to create and sustain imaginative involvement that the majority of the work remains to be done. Any workable solution to the problem of language interaction in a game – whatever that solution may be – will clearly be a result of appropriate technique, not of advances in technology. Similarly, the question of seamlessly melding interactivity with storytelling will only be solved through specific techniques applied in specific instances, not through technological advance.

To gauge the amount of successful transparent technique that remains to be discovered in the interactive industry, consider the number of failed attempts to create emotionally involving works that have been made throughout the history of the industry. Despite incredible technological advancement, massive infusion of capital, and an inspiring expenditure of creative energy, the industry is still at a point where its entertainment routinely fails to deliver an emotionally meaningful experience.

To make matters worse, the process of creating emotional involvement through the melding of interactivity and magicianship is exponentially more difficult than is the same process in any passive medium. To illustrate the daunting nature of the task, consider the totality of techniques used within the film industry. Consider also that when you see a film which fails to sustain suspension of disbelief, you are witnessing, in almost every instance, failed technique. Even after a hundred years of distillation and study, the craftspeople trying to use the mature technology of film still routinely fail to produce the right technique at the right moment to keep the audience imaginatively involved – despite the fact that all that filmic knowledge concerns a completely controlled medium in which the audience has a passive role.

In interactive works the blending of interactivity and magicianship is revealed to be no less than a new dimension of technique which must be learned. Where the sum of techniques in all passive works might be represented in two dimensions, the techniques which apply to interactive storytelling exist in three dimensions, necessitating even greater understanding and mastery. While technique in passive storytelling needs only support involvement in a story, adding interactivity to the mix means a technique may still support the narrative experience it references, but at the same time may fail to transparently support the interactive or simulated part of that same experience.[12]

Illusions of Interactivity

The glittering assistant strides on stage again and takes the rings and handkerchiefs from the magician, startling you momentarily with her exaggerated stage make-up. The sequins on her costume shimmer like a thousand stars as she leaves the stage.

The magician produces a deck of cards from nowhere and fans them for the audience. He shows them to you - a regular deck of fifty-two cards, all in sequence - then squares them again into a deck. He shuffles them rapidly in mid-air, then cuts them with one hand. He fans the deck again in front of you, the backs of the cards facing up, and raises his charismatic voice to the rafters. "Pick a card!" he calls out. "Any card!"

You hesitate, your hand over the deck, caught between a desire to make a completely random pick and the suspicion that it does not matter which card you choose. Still, you carefully pull a card free and hold it close to you, peeking at its face. The queen of spades ignores your curiosity and looks off at something in the distance.

The magician closes the deck again and whips it toward the audience with a snap of his wrist. A flash of light fires from his hand and suddenly the cards are gone. The magician gestures for you to show the card to the audience and you do so, keeping it hidden from his prying eyes.

The magician gives you a long accusatory look as you press the queen of spades to your chest. He smiles a wily smile and steps slowly back, raising his hands, orchestrating you know not what.

Suddenly the magician throws his hands toward the curtain at the rear of the stage, which explodes in a shower of sparks and light. In a flash the curtain is gone, and there, hanging on the wall, is a massive painting of the queen of spades, her now smiling face peering down at you in amusement.

The crowd goes wild and the magician takes a bow. You look at the card in your hand. The queen of spades smiles up at you.

[12] The same holds true for the other permutations of this process - magicianship may support interactivity but fail to support itself, interactivity may fail to support magicianship, etc. And of course faulty use of even a single technique may wreck everything at once.

"Pick a card," the magician said. "Any card." A simple solicitation, which is at one and the same time a moment of pure freedom of choice from the point of view of the member of the audience, and a moment of meaningless choice from the point of view of the magician.[13] No matter which card is chosen, the result has been completely predetermined by the magician and merely revealed to the audience member.

As a result of the force of the transparent techniques the magician has employed, the assistant from the audience has almost no choice but to believe that they have materially participated in the illusion. That feeling – the internal conviction of participatory involvement - supports the illusion inside the assistant's head in ways that the magician cannot dictate but *can* prepare for. This is imaginative involvement at its peak: the audience member's own imagination is enlisted to help convince the audience member that they have materially participated in something which they did not participate in.

At this point, the line in interactive entertainment between magicianship and genuinely determinative interactivity may indeed blur into nothingness from the point of view of the player. In fact, that's the goal. But while creating the appearance of interactivity may be a godsend in terms of technique, a danger exists that the line between real interactivity and magicianship may become obscured for the designer as well.

Designers with no conscious awareness of technique have no reliable way to execute, or even harness, their own imaginative concepts. As a result, they risk becoming swayed by their own erroneous imaginative beliefs about what they are doing and the medium they're doing it in. Because there is, by definition, no real interactivity in stage magic, the magician is immune from any similar sort of seduction, unless they are willing to cross the line and actually believe in magical powers. The interactive designer, however, really does have access to magic: where magic is the ability of a machine to reveal unscripted outcomes that have been determined by player choice.[14]

Language Interaction and Technique

In the search for reliable techniques of interactive design, the first objective should be to try to define the borders within which our techniques will be found, so as to know what we should not even try to do. Granted, we don't want to close the door on any possible breakthroughs, but we also don't want to beat our heads against rocks this industry has failed to crack from day one. Enough money and creative energy has been wasted on failed techniques in the past: it is past time to make meaningful distinctions that will preclude this kind of waste in the future. The two problematic aspects of game design which have already been mentioned above will serve as examples.

First, it seems obvious from what has been said that we should not try to create a system of genuine language interaction, *or even imply that one has been created*[15]. To do so, in

[13] The magician switched decks before offering the player a choice. Every card in the new deck was the queen of spades. Each card in that special deck responds to the warmth of the audience member's hand, changing the queen's face from bored to smiling.

[14] When a chess program beats you silly, it's not a trick. It beat you.

[15] Implied interactivity can only serve as a screen or bridge for the player's imaginative involvement if the player does not perceive the illusion. Some implied interactivity succeeds by

any measure, is to guarantee that suspension of disbelief will be destroyed, because whatever techniques we use will be unable to support this illusion[16]. It is much better to recognize beforehand that believable language interaction must be finessed through techniques specific to a given product than to assume that it *will* be as a matter of course or convention.

As a construct of pure technique, whatever form of language interaction we choose needs to be supported by the rest of the game - in the writing, in the way the characters react while they player waits or listens, in the way the world of the game itself allows for these moments, in the way the interface responds to player inputs, etc. All of these efforts need to be successfully integrated into a whole which supports the intended illusion of language interaction within the imaginative world. To fail to do any of this is to guarantee that the illusion will fail repeatedly.

In this light it is no accident that *Dark Side of the Moon* primarily uses the click-a-line-of-dialogue approach common to adventure games, or that *Half-life* has almost no language interaction at all[17], choosing instead to feed scripted information to the player at certain trigger points. Both of these are time-tested techniques for getting around the difficulties of language interaction, and both have been, more or less, accepted as conventions by the interactive audience.

Each of these techniques, however, can still wreck imaginative involvement in specific and identifiable ways. In *Dark Side of the Moon*, having the line on screen to choose, then hearing it repeated in the voice of the main character, decreases the entertainment value and emotional power of the dialogue. There is also the possibility that the reading of the line by the voice actor will be at odds emotionally with the emphasis the player gave to the line in their own head, creating a disconnect. As well, the mere fact that multiple lines of dialogue are present implies a kind of depth that the branching dialogue structure simply can't support, which can destroy the player's imaginative involvement. As a result, the player may simply click through all of the lines to get the desired information, instead of picking one line because it reflects the player's role-based choice at that point in the game.

In *Half-life*, the scripted dialogue is occasionally triggered at times when it's impossible to hear what's being said because of the variety of soldiers and monsters that are trying to kill you. There are also occasions where the information that's being related is passed on in such a contrived manner as to make the player "see" the hand of the designer - which is exactly opposite the intended effect. Finally, in some places the triggered dialogue is

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virtue of the specific instance in which it is employed, but the illusion of language interaction universally fails because the player's awareness of language - determined by their real-life experiences - is too acute and sophisticated in every instance.

[16] The reason we cannot support the illusion of language interaction in the same way that the magician intimates interactivity via the "pick any card" instruction is because a deck of cards if finite in number and fixed as to type, while language is infinitely complex and always evolving.

[17] In *Half-life* your player-character never speaks to the non-player characters (you never have any dialogue to choose from) but it is possible for you to command some of the NPC's to follow you or to wait behind. Although non-linguistic, these commands play like primitive conversations, in part because the NPC's do respond to the commands with lines of dialogue.

either inaccurate or inappropriate to the situation, because the player's experiences and choices up to that point are either not acknowledged or erroneously assumed to have been different.

It's tempting to say then that we need some kind of language AI to handle these problems, but that's not the case. It is not the absence of bulletproof language AI which is a threat to the player's involvement, but rather the inclusion of faulty or incomplete technique which ends up destroying suspension of disbelief. The player doesn't care about AI at all, any more than they care about whether the magician's trick is real or not. All they care about is that the technique chosen to handle language interaction is *effective* in maintaining suspension of disbelief.[18]

Admittedly, the problem of implementing even effective language interaction is complicated. Paramount among all obstacles is the player's vast awareness of, and sensitivity to, the nuances of language. This means that one of the ways in which we must tailor effective language interaction techniques - and other techniques in general - is by limiting the range of possible outcomes or permutations which the player is even allowed to imagine. Not surprisingly, the methods used by both *Dark Side of the Moon* and *Half-life* address this problem quite well, by precluding the player from having any direct hand in determining the substance of the issues dealt with in the game. In *Dark Side of the Moon* the player is little more involved than is the audience member assisting with the magic trick, and in *Half-life* the player is purely a witness, although the player's ability to move during the conversation does mask this passivity to some degree.

The choice of a technique for handling language interaction also has a profound effect on a number of other aspects of the game, including both the implied point of view, as well as the depth and perhaps even the nature of the story which can be conveyed. *Half-life's* approach works well in a shooter, but how would it work in a game trying to realize a more complex and interwoven story, such as *Dark Side of the Moon*? And how does the linguistic passivity of the player in *Half-life* affect the player's ability to feel emotionally connected to the events in that world? How too does the complexity of *Dark Side of the Moon's* story - delivered in great measure through language - constrain the player's possible actions and choices?

Yet as difficult as these questions are to answer,[19] solving problems with technique is preferable to the delusion that universal conventions will support language interaction in a specific product. Only by using and honing specific techniques can we move from guessing about how a game will affect the player, to making conscious decisions which *determine* how the player is affected.

[18] This idea of effectiveness substituting for a theoretical ideal has ramifications for just about every significant problem in interactive entertainment. The ability to make these kinds of substitutions is wholly dependent upon mastery of technique.

[19] No doubt some readers will be disappointed that I have not offered techniques which I believe can support the illusion of language interaction, and that is a valid observation. I have not done so because the successful use of specific techniques of language interaction in any game relies primarily on the specifics of the product, including point of view, player role, genre conventions and designer intent. It is not *one* technique we are looking for, but rather the right mix of techniques for any given instance.

Blending Story and Interactivity

As with believable language interaction, at one time the mixing of narrative structures with interactivity was assumed to be a task for advanced AI, which would shift the events of the story as the player made in-game choices. As with believable language interaction, the wreckage predicated on this belief is vast.

While there is implicit admission these days that blending pre-scripted narratives with gameplay must be done by hand - most commonly through the alternating of missions and cutscenes - the process is still a dangerous one. At the end of *Half-life* this balancing act fails in the most basic, and in perhaps historically the most common way, when the player is presented with a simple branched choice leading to two possible narrative outcomes. It is a weak moment in an otherwise strong game, and it ejects the player from the story precisely at the moment when the story should be coming to a powerful conclusion.[20]

Dark Side of the Moon, a much more narrative-dependent work, avoids these problems by resolving narrative threads as the story nears its conclusion, with the resulting effect that the player perceives the game as picking up steam as the plot resolution nears. This is an explicit acknowledgment of the fact that a story must resolve at the end, and an implicit one that interactivity need not rely on any one culminating event in order to be successful from the player's point of view.

The chief lesson in this is that the end of any game is the moment when unresolved narrative elements must take precedence over interactivity, and especially over branched choices which seek to give the player a blatantly non-determinative voice in how the story ends. The reason this is important from the point of view of transparency in technique is because everything the player has experienced up to that point prepares them for a specific resolution, and it necessarily weakens that resolution to interject interactivity at that point. To go against the player's own experiences over the course of a game is implicitly to go against the player's own state of imaginative involvement, which will certainly disrupt suspension of disbelief.

This is not to say, however, that there are no opportunities for meaningful emotional experiences or choices within a narrative structure, or that the end of a game cannot sustain such choices. Consider the following two examples of techniques derived from interactivity and magicianship, which create in the player's mind a moment of compelling effect.

In *Dark Side of the Moon*, late in the game, the player is given the simple choice of either allowing a villain access to escape from a doomed planet, thereby saving his life, or refusing to allow that access, thus sentencing him to death. It is a simple moral moment,

[20] I would argue that the shift to the alien world of Zen is also weak in that there is no emotional preparation for the move, and thus no meaning when the player arrives. This has the effect of making all the hopping about seem very arcadish because there's nothing else to notice or respond to. This same urge to confront the player with something new occurred in almost exactly the same way in Chapter VI of *Betrayal at Krondor*, and had a similarly weak effect.

and yet it works precisely because the choice offered to the player determines not the resolution of the entire gaming experience, but rather the simple resolution of one non-player-character's narrative thread.

This player choice is no more complex than when a player playing *Half-life* decides whether to frag a given soldier or sneaks past instead, but in the former case the offered choice is pure magicianship, while in the latter it is a function of interactivity. On a purely narrative level, however, the pre-determined choice is particularly involving precisely because the story in *Dark Side of the Moon* prepares the player emotionally for the gravity of the moment. As a technique, the key to implementing such a choice in any game is to make sure that the offered choice does not attempt to influence future events in the larger story, but rather resolves only a small, discrete part of the narrative.

For an example from the other end of the spectrum, where simulation can be used to create a kind of narrative experience which functions seamlessly with genuine interactivity, consider *Quake*.[21] Granted, *Quake* has absolutely no narrative in the conventional sense, but it does create a narrative experience which can be defined as the sum of the monsters (characters) and physical spaces (settings) a player encounters, along with the actions the player takes in response to those elements. A series of levels leading to a boss level can also loosely be likened to plot points leading to a climax or resolution. Playing through these levels creates expectations of future events within the game (how the monsters act and attack, where an ambush might be), which increases anticipation, as well as creating and determining player hopes ("I hope I don't get killed again...."), which is directly analogous to the effect that a story has on its audience.[22]

A personal example of this kind of unscripted narrative experience in Quake centered around a fear I had developed of Shamblers: the big, white, lightning-bolt-wielding "abominable snowmen". In one particular instance I found myself on a level teeming with Shamblers, and although I was still alive, I had been chewed up pretty good. While on the run, looking for health, I heard a Shambler nearby, and immediately took off in fear, avoiding the room I thought the Shambler was prowling. I raced around a corner leading to a flight of stairs that I had already used several times for escape, except this time I slammed to a stop against a wall that I hadn't seen before. Then I heard the Shambler - whose stomach I was staring at - scream, and I was completely unnerved. I literally jumped in my chair and my heart rate shot up as I whipped around and took off running, and I honestly don't think I've ever been that scared in any other game. As my biological responses indicated, the experience was convincingly 'real,' and the emotional force of that unscripted narrative moment remains with me to this day.

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[21] I could have used *Half-life* here in a complimentary way, but I wanted to avoid confusing the simulated aspects of *Half-life* with the skillfully implemented effects of magicianship in that game. Because *Quake* has no narrative, it allows a clearer look at the effects of simulated experiences.

[22] This non-story narrative experience is a perfect example of the "third dimension" of technique mentioned above. Like all good simulations, Quake allows individual players to recount their own experiences in narrative form: "...then the Shambler attacked and I wasted him with my nail gun!" is little different from, "...we were patrolling over the English Channel in our P-51's when we were jumped by three Focke-Wulf's!" This is not a coincidence, and simulation should be looked at long and hard when you are trying to convey a narrative experience without a prepared storyline.

Taken together these two simple examples show that it is already possible to orchestrate various techniques that transparently engage the player over a fairly large emotional range, including complex moral choices and pure primal fear. Obviously, the correct techniques need to be chosen for a particular desired effect, but it is clearly possible to do this kind of design work today.

Transparency: A Moving Target

It's interesting that *Dark Side of the Moon* and *Half-life* have both been applauded for using techniques which encourage transparency and deepen involvement, because these techniques themselves represent a kind of convergence as well. *Dark Side of the Moon* has been given strong points for playing out puzzles - the staple of the adventure game genre - entirely within the world of the story. Where many adventure games challenge the player with magic squares or mazes, or any of a variety of puzzles which are completely unrelated to the narrative events of the game, *Dark Side of the Moon* seamlessly integrates logical problems into the game's narrative reality. *Half-life* similarly integrates narrative events into the game as the player moves from level to level (at times even moving the plot forward within a level) rather than showing a cut-scene or some other segregated narrative sideshow.

The importance of these choices cannot be overstated: in each case, the integration of game and story has become more transparent, and more involving, through the conscious use of technique. But while transparency is always a goal when using these technique in any projects, it's important to recognize that it is not an absolute in and of itself.

Transparency always has a context, and needs to be viewed relative to the intended audience. Just as genre-specific designs have an effect on who will be interested in a game, so do different technologies and techniques affect who will read those effects and technologies as transparent, and who will read them as disruptive and intrusive.

A good case can be made that the age-old debate between FMV and polygons is just such an example: you either "see" polygonal creatures as real and meaningful within the context of the imaginary world of the story, or you don't. If polygons don't work for you, then chances are FMV will, but neither approach is "right". What is important is for the designer to decide if either is critical to the work, and whether or not that approach will be accepted by the intended audience.

The only constant we can claim about transparency itself is that it defines the limit of our ability to create desired effects using existing techniques and technologies. For example, a designer might want to include smells in a game, but there is no current technology that supports them. Likewise, if a designer wanted to include unscripted jokes in a game, there is no humor-producing AI available to implement that feature. By tautological definition these things cannot be made transparent.

Threats to Transparency

Back in your seat you can still feel the heat of the spotlight that bathes the magician in radiant silver light. You watch as the magician produces a small red ball with one hand,

then disappears it into the other hand. You watch two balls appear and disappear, then three - all in a blur of waving hands. Handkerchiefs, gold coins, doves and flowers come and go, and always the magician's hands are moving.

And suddenly you notice something you hadn't seen before: there is a rhythm in the magician's hands. One is always on the move, the other still and often hidden. One is always showing to the audience, the other half-forgotten. It is an irregular but constant tempo - made up of two separate actions, with two separate intents. And to everyone in the audience but you it is transparent.

Because transparency is not an absolute, and because it cannot be measured objectively, the designer must lean heavily on sensibility when determining which design choices support it and defeat it. For this reason it is important to look for ways of 'seeing' transparency that allow us to move past mere compilations of possible techniques.

In order to sustain transparency - whether in technology or technique - we need to guard against two ills. First we need to make sure that we have not made any outright errors, either in the writing of code or in the practice of magicianship. Bugs, typos, glitches and anything else which is demonstrably wrong must be eliminated from the product. Second, even if we have a perfect product on a mechanical and logical basis, we may have still have created something tedious or boring. To that end we need to make sure that our interactivity and our magicianship actively supports the player's interest.

These two intents - the elimination of errors in technology and technique, and the inclusion of interest - are directly analogous to the magician's hands. One hand is charged with producing the balls via sleight of hand (avoiding mistakes), while the other is charged with distracting the audience's attention with gestures (entertaining). If the dance these two hands produce is important to the magician, who is trying to keep the audience from perceiving how a trick is done, it is absolutely critical to the interactive designer. This is because the designer has the added obligation of repeatedly and transparently moving the player between interactive and non-interactive moments.

So far, all of the disruptions to transparency that we have discussed concern mistakes and how we can eliminate them. Fortunately there is also a way of testing for transparency relative to perceived mistakes which can be used at the design stage, saving us the far greater cost of discovering problems or mistakes during production.

Consistency: Predicate of Transparency

From the first moment a player hears about a new game that player begins creating a mental model of the product in their mind. This speculative mental model becomes more refined as the player hears more about the product from the developer, publisher, and attendant commentators. When the product is finally released, the player's mental model undergoes its first test: does the game actually meet the player's expectations?

If not - and despite the fact that the game may be great in its own right - the player will feel a disconnect between what exists in their mind and what exists in reality. What is

important to note is that this disconnect is caused by inconsistencies between the player's mental model of the game and the game itself. It is not caused by an objective superiority in either the player's conception of, or the reality of, the game.[23]

Clearly in this instance there are factors outside the game which can cause these inconsistencies. Because the marketing department's goal is sales they will often hype aspects of a game to a degree that the game itself cannot support. As well, online discussion groups will often (if not eagerly) give voice to numerous uninformed opinions, for reasons ranging from ego to vice. As well, the gaming press may tout a game in a preview which talks more of fanciful potential than of budget-driven reality.

Because these factors cannot be controlled, it's understandable that inconsistencies may exist in the expectations of the intended audience. What is not excusable is that such inconsistencies may permeate the game's design as well, destroying the player's mental model when they are already immersed in the game.

Consistency as a design technique describes the process of maintaining the defined rules which govern the player's mental model. In the case of actual gameplay, it's readily apparent that inconsistencies in design - doors that you can sometimes bash open and sometimes not - are a mistake. In the rules which govern gameplay it's also clear that inconsistencies damage the player's experience: damage models that apply damage randomly or inaccurately will frustrate the player's ability to intentionally act to defeat foes in combat.

What is not as apparent is that inconsistencies do as much damage when they occur in magicianship. Just as the player forms a mental model of the game's rules, they also form a mental model of the imaginative world in which the game takes place. That's not something you have to worry about much if you're producing a Chess game, but it's critical if you're developing almost any other kind of product. The reason it's critical is because the addition of narrative or fictional elements brings with it the responsibility of making sure those elements do not, because of some inconsistency, eject the player from the narrative mental model that is holding the player's interest. (The magician's gestures are not separate from the trick, they are part of the trick, and must also succeed.)

For example: fictional elements cannot be stapled on haphazardly, characters cannot contradict their internal truths, and plot points cannot be resolved coincidentally or remain unresolved if they are central to the story. Consistency also demands that if the story world is in one state in the first scene, it will remain that way throughout the story, unless the audience is specifically told that something has changed. True for all storytelling, this is no less important in interactive works, and may actually be more so.

Consistency can fail in many small ways, but perhaps the worst kind of inconsistency in interactive works involves the way in which a game shifts between giving control of the

[23] It is important to note that this is *not* what the player thinks or feels at that moment. From the player's point of view, the reaction to this disconnect almost always involves blaming the game - which means that the player's first experience with the product is negative. There is a warning in this for every developer.

action to the player, and taking control away. If the player is always allowed to fight battles, but then a cut-scene arises in which the player is pummeled without having the chance to strike back, the player is going to feel cheated by this inconsistency. Where before the player was given a choice in combat, now that choice has been taken away in furtherance of imaginative involvement in the story - but at the expense of shattering involvement in the interactive experience. Needless to say, at that point involvement in the story is forfeit as well.

From such an egregious example, all the way down to inconsistencies in interface design, or in the handling of in-game text, or even in the placement of textures or the lighting of scenes, inconsistencies routinely dispel suspension of disbelief. Fortunately, the constant nature of this aspect of design - as against the moving target of transparency - means that consistency is a universal editing tool as well.

When considering the addition of some element to a design, the designer must be able to make that element consistent throughout, or it must be dropped. If a game is proving problematic in beta-testing, and players are becoming confused, the first thing to check is the consistency of the elements which are causing the confusion. In all cases, consistency is the correct aim: inconsistency is never desirable because it can, and probably will, destroy suspension of disbelief.

The Cost of Consistency

While consistency is desirable in any aspect of a game, the cost and difficulty of providing consistency is not constant. The reason for this is that consistency in techniques of magicianship is arrived at in an entirely different manner than is consistency in interactive or simulated processes.

Because interactivity and simulation are rules-based processes, it is very easy to design consistency into them. If you want to let the player blow up a tank, it's not a great intellectual leap to extrapolate consistency by letting the player blow up all tanks, or even all vehicles. But although simple at the design stage, rules-based consistency often becomes almost unwieldy in the production phase because there are so many possible variables that revolve around "blowing up" a tank. How is the damage modeled? How is it calculated? How accurate are the weapons? Is there one generic blast, or is the damage depicted on a per-polygon basis? Can the blast of the explosion damage other vehicles, and if so, how? Does the blast damage the terrain? If it does, is the damage generic for all different kinds of terrain, or is it modeled differently for mountains, etc?

It's exactly this overhead that causes many well-intentioned designs to fail. It's also this overhead which is at times misidentified as feature-creep, when it is instead the result of attempting to fulfill an underestimated obligation to maintain consistency (and thus transparency). This kind of snowballing production nightmare can literally crush a game in production if it is not fully considered during design. Fortunately, this kind of consideration, although labyrinthine at times, is still fundamentally logical.

This is not at all true of the application of consistency to magicianship. Although there may be abstract logical relationships which hold, the application of magicianship almost always relies on sensibilities which cannot be reduced to formulae. This makes ensuring consistency at the design stage almost impossible, because information related to specific techniques of magicianship and their supportive contexts will be in flux. Maintaining consistency in this case requires constant adjustment throughout the production process.

The flip side is that the cost of maintaining consistency in magicianship never explodes as it can with simulation/interactivity. Even better, as long as the persons charged with maintaining consistency in magicianship have the requisite sensibilities, the need for doing so should be apparent when it first arises. Best of all, the cost of a fix may be as low as changing one word in a sentence or adjusting one color in a texture.

Techniques of Entertainment and Distraction

So far almost everything that has been mentioned about transparency has been concerned with limiting errors caused by the hand of the magician which is actually doing the trick. In interactive entertainment this hand can be described as the sum of the algorithms and magicianship which directly supports the gaming experience, whether interactive or not. But the other hand - which distracts the audience's eye in order to cover the first hand's moves - is just as important in maintaining transparency. Its responsibility is to distract the audience from the mechanics of the process through entertaining distractions.

The responsibility to distract the audience from the mechanical nature of an unfolding plot is almost constant in passive forms of storytelling. While most elements of a story should and do relate to the meaning of the whole of the work, there is also ample room, and good reason, to provide moments of humor or drama which are not essential to the story being told. Chief among the reasons for doing so is simply that a more enjoyable experience is provided, which translates into a more immersive imaginative experience for the audience. Also of benefit is the fact that distracting the audience with fun imbues the story with a depth of reality that cannot be achieved in any other way: life is full of meaningless and unrelated moments, and stories can profit from these as well.[24]

As might be assumed, there are a number of techniques of distraction and entertainment in passive mediums which can be adapted to interactive works - although the overhead in some cases is significantly higher due to the demands of consistency and transparency in the interactive form. This does not mean however that all distraction will require hand-crafted magicianship in each instance.[25] By way of example, three techniques of distraction through entertainment are cleverness, detail and discovery.

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[24] The classic LucasArts and Sierra adventure game franchises were built on the precept that people will forgive a lot if you make them laugh. Humor is the single most compelling form of distraction you can throw at an audience, and returns considerable benefits if used appropriately.

[25] There is a whole world of simulated processes which are in fact magicianship, but which do not rely on sensibility beyond their design intent. In fact, anything in a game which is algorithmically determined and transparent, but not interactive, falls into this category. An example would be a random weather generator which lends imaginative depth to a simulated environment.

Cleverness and Expectation

For our purposes, harnessing cleverness as a design technique can be described as the process of creating pleasant surprises. Even something which negatively impacts a character, or darkens the story world, can be a pleasant surprise, because audiences want challenge in both their passive and interactive entertainment.

The problem with harnessing cleverness is that it's a relative concept; a moving target that assumes on one hand that the audience is ignorant of something, and on the other that the audience will immediately make the correct connection when that something is revealed. If the audience either knows about the 'something' already, or doesn't make the intended connection when it is revealed, then suspension of disbelief is disrupted because the audience is ahead of you and bored, or has been left behind and confused.

A classic example of cleverness occurred in the original Indiana Jones movie. In that celebrated moment when the giant swordsman appeared, wielding a massive scimitar, the audience was compelled by a number of forces - the conventions of the genre, as well as previous experience with the main character - to assume that a lengthy and dangerous fight would ensue. When, instead, Indy simply shot the swordsman, it evoked wild applause and laughter because it was such an obvious solution to the problem within the logic of the story world, and such a cleverly constructed moment in the story.[26] The 'something' that the audience didn't suspect was that Indy would just shoot even though the gun was in plain sight on his hip. When that something was revealed, the audience understood it immediately within the context of the imaginative world, so it worked.

Another celebrated example - this time in interactive - is the dueling sequence used in *The Secret of Monkey Island*, which exemplifies cleverness for two reasons. First, the dueling sequence turned dueling on its head by having witty repartee serve as the basis for combat. Because the player expected some kind of mouse-clicking action, this expectation became a preconception that the designer, Ron Gilbert, used to advantage. Second, the actual language of the repartee was itself clever, and even when the player knew that the duel was about words, those words were themselves entertaining because of their cleverness. In this case the 'something' was that a duel could use words instead of weapons, but when that 'something' was revealed the audience immediately understood it within the context of the game. The second 'something' was that the cleverness of the device flowed into the cleverness of the dialogue, and repeatedly so.

Note also that in both cases the actual events are not critical to the work as a whole. Yes, in a general sense they were entertaining moments, but removing them would not have crippled the mechanics of the product or destroyed suspension of disbelief.

Now, your average storyteller in passive mediums doesn't walk around thinking about cleverness as a technique, because it pretty much comes with the territory. Still, it is

[26] I do know the history of how that moment came about, with Harrison Ford suggesting it to Spielberg because he was feeling ill that day and not inclined to shoot a lengthy scene. That the idea was made on the spur of the moment does not deny its relevance.

important to actively look for opportunities where you can use cleverness, and there is a way to approach the task which springs from the technique itself.

Cleverness turns up most obviously and commonly in the plotting of stories (both passive and 'interactive') and here there *is* a craft phrase for its use. A *reversal* in plotting is simply an acknowledgment that audience expectation has been used against the audience. To use reversals - and thus cleverness - as a technique, the interactive designer should watch for moments where the player may have expectations which can be used to advantage. These expectations may come from outside experience, from familiarity with a given genre, or from the mental model which a specific game creates over time. Also keep in mind that reversals and cleverness aren't limited to plotting: they can also show up in dialogue, characterization, object utilization, architecture and on and on.

It's important to note, however, that cleverness is not created simply by clearing up confusion in the audience's mind. It is not clever to reveal the murderer to be a character which the audience has never seen. What is clever is to reveal the murderer to be a character the audience is intimately familiar with and believes to be innocent. Cleverness functions because the audience is sure of something - never because they are unsure.

Cleverness is also not created by throwing something at the audience from left field, because cleverness depends upon preparation. Surprising an audience with new information or events does not create enjoyment, but rather creates confusion in the audience's mind as they struggle to see how this new information "fits" into the mental model they've created.

"God is in the Details"

This famous quote comes from the architect Ludwig Mies van der Rohe. For our purposes, detail as a technique involves the inclusion of things which are not critical to the main thrust of a game, which dovetails nicely with our interest in techniques which are used to distract and entertain the audience. Some detail is obviously critical - a small object on a wall that reveals a secret room when pressed, say - but that's detail in the specific sense of the word. Detail here concerns the general use of objects or sounds or events which round out a simulation or game, but which are not necessary for participation or completion.

As a technique of entertainment detail in any craft relates to the perceived or actual depth with which something is presented. In interactive entertainment of late, great emphasis on detail has come from advances in graphics, but that's not the only important area where detail pays dividends. Detail in character, in place (setting), in backstory, in time of day (see *Zelda: Ocarina of Time*), and on and on - all increase the player's sense of imaginative involvement. Provided that the details in a game are rigorously consistent, and that they do not imply interactivity which is not actually implemented, details become variables which allow a designer to make any place or moment unique simply by mixing them in different proportions over the course of a game.

The knock against detail of this kind is that it is nonessential, but detail need not be expensive either in terms of time or cost. The difference between a room with no manipulable objects and a room with one or two can be profound from the player's point of view. A story with no plot twists, no perceived player influence (whether real or not), and no resolution of loose ends pales in comparison with a story with only one plot twist, two resolutions, and three moments of perceived influence.

How much detail you can provide will be determined on a case-by-case basis, but you should always have an eye out for cheap and consistent detail that can be added. Sound effects are a continually overlooked source of this kind of detail.[27]

Discovery: Interactive Revelation

Discovery as a technique in interactive works usually involves creating interest by concealing information which the player can reveal to themselves through exploration. Two classic examples of this are the discovery inherent in map-based games which use masked terrain and/or line-of-sight, such as *Civilization* or *Warcraft*, and the discovery inherent in the exploration of virtual spaces which is the meat of any shooter.

As a basic component of passive narratives, discovery is also relevant to storytelling in interactive products, but it is often badly or inappropriately implemented as a surprise which is sprung upon the player without adequate preparation.[28] This kind of misuse also appear in quasi-narrative structures such as mission design and campaign organization.

Although a revelation of information is the process behind all passive forms of entertainment, interactivity raises the bar by providing an interactive component to the player's or player-character's presence in the game. This means that simple revelation often seems pejorative by comparison. And that's the essential distinction between passive discovery (witnessing) and the discovery inherent in exploring levels or maps: the player's actions initiate the revealing of new places or new information. To remove the stigma attached to delivering a passive narrative to the player, the interactive designer need only make the player believe they have caused or prompted the revelation.[29]

If you want to spring a narrative surprise on the player - revealing a character to be a traitor, say - it's critical that you both prepare for the revelation and that you allow the player to participate in the discovery via their participation in the game. This participation can range from illusory, where the player merely triggers an event, to purely interactive, where the player's actions determine the make-up of a specific revelation, but

[27] Sound effects generally promote emotional responses while images promote more rational ones. When you hear a sound that you do not understand, it may cause fear or uncertainty. When you see something that you do not understand, it tends to cause confusion.

[28] Preparation is another key component of successful design. Without adequate preparation, no aspect of a game can have any meaning beyond that which is associated with it through common knowledge. Unfortunately, forcing the player to refer to works or experiences outside the game destroys imaginative involvement. This means that if you want an object or character or action in a game to have a specific meaning, that meaning must be prepared for in the design.

[29] Even clicking lines of dialogue in an adventure game can be sufficient participation for people to feel that the revelation of the story is being caused, as opposed to simply witnessed. Although this participation by the player is illusory, it still supports transparency.

in either case the player must have some sense that they were involved in its occurrence. Similarly, whether a campaign is fully dynamic or uses a pre-designed branching mission structure, the player must, as much as possible, feel that their actions determine the events which are unfolding before them.

Still, in any facet of a game the simple technique of allowing the player to discover things for themselves is a powerful root force in interactivity, and it is an equally powerful force in entertainment. To the extent that you can weave discovery into your designs as a rules-determined aspect of the game (for example, with line of sight) you will have increased the player's interest. If you can go beyond that and actually introduce discovery within characters and storylines, you can cement the player's emotional involvement in ways which are impossible to replicate.

For those who doubt this, consider the use of discovery inherent in the revelation of Floyd's death in *Planetfall* - one of the more emotionally charged non-interactive experiences in gaming history. The death was prepared for through Floyd's role and characterization, and appeared to be 'caused' by the player, even though the player was following a completely linear and pre-determined path.

Final Thoughts

Previous industry efforts to wed story and game have focused on using whole forms of storytelling - branching scenes in particular, which are themselves made up of numerous individual techniques - in some interactive way. But storytelling techniques, in order to be usefully in interactivity, must be harnessed at an elemental level.

For example, ascribing the role of 'bad guy' to a specific character at the beginning of a game is not necessary in order to use a 'bad guy' as a storytelling technique within a game. As well, specifying the exact location of future events in the story world is not necessary for the inclusion of those events over time.

In all similar cases the critical question is: what is portable? What can we move around behind the scenes, based on the player's interactive choices, so that scripted events are revealed at the appropriate time, *but are based on and consistent with the player's unscripted choices*? If the construction of in-game events is approached in this way, it both increases the player's suspension of disbelief by increasing transparency, and increases the player's sense of imaginative involvement by increasing the appearance of, if not the actuality of, meaningful interactivity.

In any case, for each aspect of a game that we want to include in the design, we must have - or must invent - a transparent technique which allows its inclusion. If we cannot do this, we must reject and avoid that aspect of the design, modify it until it can be made transparent, or make it effectively transparent by distracting and entertaining the player.

All game designs, and all production efforts, will profit from this targeted approach.

– Mark Barrett