

# Meaning in Storytelling and the Impossibility of Computation

by

[Mark Barrett](#)

## Introduction

The primary aim of storytellers in any medium is the creation of *suspension of disbelief*. This mental state allows an audience member to deny the theater seat they are in or the book they are holding, while at the same time enabling them to accept the fiction being offered in a way that directly accesses their emotions. It is this direct access of emotion that we feel when we are moved by a story in which we have suspended our disbelief.

Without suspension of disbelief emotional involvement cannot be attained. This is true for all fictional mediums, including interactive works. No matter how interesting the plot, characters, setting or mood may be, an audience cannot experience a story emotionally without suspending their disbelief. An audience can understand a story rationally -- and in the case of interactive works, can compete and win or complete designated tasks, and derive genuine satisfaction and enjoyment from doing so – but experiencing an emotional connection with any fictional work is *always* predicated on suspension of disbelief.

It is axiomatic, then, that interactive works which aspire to present emotionally resonant fictional content must meet this suspension-of-disbelief requirement, despite and apart from any other entertainment inherent in the medium. Unfortunately, interactive stories present an additional authorial barrier to the creation and maintenance of suspension of disbelief, because interactive fiction inherently allows and encourages the audience to dictate events in the narrative.

This lessening of authorial control necessarily also decreases authorial control over suspension of disbelief, raising the likelihood that it will be damaged as a result of weakness in the remaining authored content, as a result of the audience's own decision-making, or some combination of the two. The obvious solution to this problem – at least in theory – is to program computers themselves to sustain suspension of disbelief as users make authorial choices.

## The Global Approach

The problem – and it has turned out to be a much, much bigger problem than originally anticipated – lies in defining storytelling rules that can be coded and calculated. Because computers can only calculate logically, what's needed is a kind of narrative math: a set of rules by which a computer can steer or adapt a narrative in the context of player-determined choices.

While the search for such rules has been underway for decades in the interactive entertainment industry, and almost as long in academia, similar attempts to define foolproof methods of creating and sustaining suspension of disbelief in *any* medium have remained unproductive over thousands of years. For every formula or essential rule that has been devised there are logical and illogical-yet-successful exceptions. In fact, the same intellectual processes that enable the crafting of stories which elicit suspension of disbelief seem incapable of exhaustively describing how that end is achieved.

For those interesting in practicing the craft of storytelling in the interactive medium, this paradox is obviously a warning. Look for answers not only in logic, reason and rule, but also in human sensibility, because it is at least partly through non-logical sensibilities that storytellers learn and practice their craft. Unfortunately, for those schooled in algorithms and formulae this nebulousness often smacks of the supernatural. Add to such suspicions the voices of storytellers who believe their craft *is* a gift from a muse and the stage is set for serious misapprehension.

Spiritual beliefs about storytelling ability may be quaint when professed by authors over coffee at a corner cafe, but in the world of interactive entertainment they reinforce the false idea that all storytelling is predicated on unknowns. By extension, such spiritual explanations also imply that storytelling practitioners from novice to veteran are equal in terms of craft knowledge, when nothing could be further from the truth.

If success in storytelling is predicated on a combination of authorial sensibility and logic, then it stands to reason that the more experience a person has using these tools the better they will be at doing so in the future. Because some authors are obviously born with editorial and artistic gifts, however, such chance inequities seem to reinforce the idea that storytelling is a spiritual blessing, in the same way that someone who can run very fast might be said to be gifted or blessed.

The very idea of inspiration, then – whether divine or mundane – not only confuses the question of whether there is any logic in the craft of storytelling, it asserts that there are no reliable methods by which suspension of disbelief can be created and sustained in fictional works. Yet this is obviously false, given that every bookstore and library is stocked with stories that were intentionally and deliberately told. Human beings clearly have a capacity for creating and sustaining suspension of disbelief in the stories they tell, and for doing so repeatedly – both individually and as a species.

That these same human beings cannot exhaustively define this capacity by rule does not imply a spiritual source. What it does imply is that maintaining suspension of disbelief in storytelling *requires* human sensibility.

The assumption of this truth – that human beings have a unique capacity to create and sustain suspension of disbelief – has also been the cornerstone of an alternate way of dealing with suspension of disbelief in interactive works. Rather than try to program computers to handle the storytelling in a game, some developers have tried transferring the creation of storytelling content in whole or in part to the audience of human users.

Unfortunately, after a great deal of exploration in this area – including many celebrated massively multiplayer online games – the dilemma remains unchanged because authorial sensibility is a relatively rare skill in the general population. As a result, interactive developers must still originate a good deal of the narrative content in their products, and must do so even in games where players interact as much with each other as with non-player (fictional) characters.

No matter how this problem is addressed globally, authorial sensibility as a direct agent of suspension of disbelief cannot be substituted for, whether by handing the task to a computer or to the audience itself. Because of this truth the dream of creating a comprehensive storytelling mathematics which will allow computers to tell stories and maintain suspension of disbelief is revealed instead to be a fantasy. A compelling fantasy to be sure, but a fantasy nonetheless.

### **The Atomic Approach**

It does not necessarily follow, however, that computers cannot – at least theoretically – be used to implement or manage *any* aspect of storytelling or suspension of disbelief. Searching for a single storytelling atom that could be coded and calculated, as opposed to a comprehensive method of telling stories, might lead to *something* that would aid us in creating games that maintain suspension of disbelief at least partly through computational processes. Even one reliable rule would be useful, and validate our search for more.

Fortunately, if the number of available “How To” books is any indicator, the most likely sources of such atomic storytelling wisdom are both available and eager to talk. Written by authors, editors, critics and gurus, these works, to one degree or another, *do* purport to reveal how stories are written. All we need to do is identify one bit of storytelling knowledge that can be formulated into a concrete rule and we’re on our way.

Perhaps reflecting my own bias as a storyteller, it seems that authors are a particularly worthwhile group to consult because of their intimate experience with suspension of disbelief. Even leaving aside authors who have given themselves over to spiritual influence, however, authors who do believe they are in conscious control of their craft unfortunately tend to write books about how *they* tell stories.

While perhaps enlightening in a historical sense, such works routinely fail to include information necessary for replicating the individual author's approach, including an exhaustive recitation of the author's neuroses, pet-peeves, prejudices, biases, obsessions and vanities, which are as much a part of any author's output as is the classic three-act structure. Too, when pressed to explain why a certain work received acclaim while another was neglected, these same authors - if not honestly expressing outright bewilderment - will often cite causes within popular culture or the critical temperament of the times, but will rarely offer up a rationale based on method or technique.

Given that the ultimate goal of interactive storytelling is the creation of algorithms which replicate the storyteller's craft, it is not a good sign when the best authors are unable to

logically explain their work in a way that allows for the creation of such programs. It is, instead, another indication that authorial sensibility is critical to the ability to tell stories.

Perhaps underlining the inherent limitations of any individual author's perspective, the two most useful books I've ever read about storytelling were written not by storytellers but by fiction editors. *Writing in General and the Short Story in Particular*, by L. Rust Hills, and *The Fiction Editor* (reissued as *The Fiction Editor, the Novel, and the Novelist*) by Thomas McCormack, are worth your weight in gold if you are interested in telling stories. Removed from the confusion and intoxication of the creative moment, while simultaneously exposed to many authors of varying temperament and insight, fiction editors seem perfectly positioned to identify storytelling rules that apply in all cases.

Unfortunately, a side effect of working in close proximity to so many different authors seems to be an abiding appreciation of the degree to which creativity and imagination (aspects of sensibility, as opposed to rationality) are critical to the storytelling process. While Hills and McCormack both demonstrate a deep understanding of the relationships between narrative elements and effects, neither posits any scenario in which an author's sensibilities are not central to achieving desired effects in a particular story.

Stepping farther away from the creative moment, then, we find "How To" books written by sage critics who have dissected and analyzed thousand of stories. The critic's approach – identifying important elements of storytelling by noting their presence in successful stories – has a logical appeal.

While critics are good at documenting similarity of effect, they often lack the knowledge necessary to correctly target and isolate the *causes* of these effects. This lack of craft knowledge – which most authors and editors either have or are aware they should have – leads to the dangerously erroneous conclusion that perceived effects *are* the critical elements of narratives. Tomes written from this point of view, no matter how complex, intricate, or perceptive, are usually reducible to admonishments that encourage the replication of specific effects, rather than the authorial mastery of preparation and cause which enlivens those effects in any narrative instance.

What the critic's approach can never give us is a rule that we can use to program a computer to tell stories. However valid it might be to exhort a storyteller to "Be funny!" when describing how to write a comedy, this kind of analysis provides no useful model for creating humor. And that's not only true if we're trying to program a computer to tell stories, it's true if we're trying to teach human beings.

Which means we are down to the final group we can appeal to for rules that will allow us to code storytelling algorithms. Fortunately, it's also the most confident group.

If you really do get what you pay for in life, professional storytelling gurus would certainly seem to be worth consulting. Where authors, editors and critics relate storytelling wisdom tangential to their professions, gurus not only profess to know how stories are created, they have made it their life's work to teach this knowledge to others.

Like writing instructors generally, gurus teach workshops, classes and seminars, often on a traveling basis. Unlike most instructors, however, gurus usually conduct these gatherings without reading or commenting on the attendees' writing in an individualized way. Where teachers interact with students, gurus give lectures and make presentations. Where teachers attempt to pass on established knowledge about writing, gurus sell proprietary information in the form of paradigms or rules unique to each individual guru. And where teachers promise improvement (at most), gurus promise proven results.

It's not often that someone touts tens or even hundreds of specific rules that can be used to achieve an objective, let alone master a task as complex and murky as storytelling. Unfortunately, regardless of the degree to which any guru's rules claim or aspire to certainty, the sales pitch is inevitably more promising than the actual material. For every hard rule in theory there is a qualifier in practice, or a footnoted reminder that not everyone will have attained the necessary level of mastery to apply the rule. For every analysis of story that purports to demonstrate the guru's methods, there is only the guru's claim to confirm it: no standard exists by which such analysis can be proven true or false.

And in the end that's really the point. Storytelling gurus, like motivational speakers and religious evangelists, are selling a dream. Their rules, like all such rules – the Seven Secrets of Success, the Nine Ways to Win, The Four Fears of Failure, the Ten True Techniques – are sales pitches backed only by the full faith and guarantee of the attending audience's infatuation, desperation, or both.

So: despite claims from various quarters, nobody knows how to create stories in a concrete, logical way. What they know how to do is point out various goals, ideas, constructs, effects and techniques that may be found in stories, in the hope that other human beings will not only understand these necessarily imprecise lessons, but also possess the intangibles necessary for employing authorial sensibility in pursuit of the stories they want to tell. Which means we are at the end of the algorithmic road.

### **The Impossibility**

"There are no rules!" authors are fond of saying, and they mean it. Yet authors regularly toss out seemingly reliable rules of storytelling, including, "Write in three acts," "Show, don't tell," and "Less is more." In fact, most authors would admit these are general truths, distilled over hundreds of years in precisely the manner that appeals to the critic: by noting effects. Is this not what we came for?

Sadly, no. What these rules do not do, what they cannot do, and what any rule of story construction must do to be used in algorithmic interactive entertainment is explain *when* a rule should be employed in a given story. There are no rules precisely because the effect an author might want to create in a specific instance may require breaking all known general rules. Nothing is ever more important than creating the right effect at the right time, and no rule can tell a particular author which effect is needed at any particular point in a story.

The obstacle we face in creating suspension of disbelief in interactive stories is not the struggle to find similarities or generalities among stories, but the impossibility of predicting, by rule, which specific effects should be used in a specific story at a specific time. The only mechanism ever shown to be capable of doing this is the human brain, which guides authorship by determining which events to depict fully, which to note in passing, which characters to realize, which only to mention.

The arbiter of these decisions for any author is meaning: what things mean to the author, and how the author can harness effects and techniques to convey that meaning to the intended audience. But meaning shifts constantly with context, setting, character, story, plot, time of day, weather, color, distance, velocity, aperture, pitch, tone and on and on, each change in one variable affecting the meaning of all others. We might even notice that it is the commonality of selections-for-meaning that define similar stories or define the works of particular authors by what is called voice, but these observations get us no closer to computerized story generation.

For an interactive narrative to create and sustain suspension of disbelief a computer must be able to replicate this selection-of-effect-for-meaning at the appropriate time in all instances. This is, and always will be, an impossibility, because the computer would be required to select for meaning not in a logical context, but in an emotional one.