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## **Motivation**

Peter Vorderer

University of Southern California

Francis F. Steen

University of California, Los Angeles

Elaine Chan

University of Southern California

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When we approach entertainment as an experience that is sought after, sought out, and enjoyed, we encounter the enduring question of its psychological cause. Why do human beings, across a range of different cultures and historical periods, seek out and enjoy the experience of entertainment? Why do they select and create certain types of situations and not others to entertain themselves? Why do they do it so often, for such long periods of time, and in so many different situations and settings? To ask these questions is to adopt the perspective that entertainment is a response to a certain set of opportunities rather than a feature of a particular media product itself (Bosshart & Macconi, 1998; Bryant & Miron, 2003; Vorderer, 2001; Zillmann & Bryant, 1994).

The *motivational* question in entertainment research tries to reach beyond a simple description of who is doing what in which kind of situation and attempts to explain *why* things are done as they are. In this chapter, we will try to systematize various answers to the question of why people perceive entertainment to constitute a good—why different people, in a wide range of circumstances, want to be entertained, and find the experience of being entertained rewarding. But before we do so, we would first like to bring a typical, everyday entertainment situation into focus, in order to capture the complexity of what entertainment might mean for an individual.

*It is Thursday night. Rowan is an undergraduate student at home in her apartment. She thinks about spending the night in rather than heading out to a party with friends. She is not in the mood for that sort of excitement tonight. She brings her laptop computer to the couch and sits. Rowan grabs the remote control and turns on the television, then uses her laptop to instant message her friend that she would rather stay at home. Flipping through the channels, Rowan narrows the viewing alternatives to a cooking special, the second half of Ferris Bueller's Day Off, and a reality show on MTV. She has seen Ferris Bueller's Day Off before, but settles on watching a bit until her favorite show, ER, comes on. She gets up and goes to the kitchen to find*

*something to eat, and returns with a bowl of potato chips. Next, she checks the website for ER to make sure this week's episode will be a new one. She laughs at Bueller's antics and forgets about ER until the commercial break. Remembering, however, Rowan flips to the appropriate channel, then returns to the kitchen to replenish her chip supply. The TV plays the familiar ER theme song as Rowan returns and sits back down on the couch.*

We take the kind of situation portrayed in this imaginary scenario to be commonplace, particularly among young people in Western societies who find themselves rather frequently in a broader entertainment context like the one described. Applying a motivational perspective to entertainment and to this specific situation raises the following questions: Why is Rowan (or anybody comparable to her) doing this? What prompted her to initiate and arrange this experience? Why does she sustain it for a certain length of time, and what causes her to terminate it? What, if anything, does she gain from it?

*What is entertainment?*

Recently, the academic study of entertainment has been identified as one of the most important challenges for communication theory and research (Bryant, 2004). Since systematic investigations in the 80s and 90s, particularly by Zillmann and his collaborators in the United States (e.g., Raney & Bryant, 2002; Zillmann & Bryant, 1994; Zillmann & Vorderer, 2000) and by Bosshart and others in Europe (Bosshart, 1979; Bosshart & Hoffman-Riem, 1994; Bosshart & Macconi, 1998), entertainment has often been conceptualized as an affective response to entertainment products such as movies, TV, music, or books. Similarly, researchers have regarded entertainment as a human activity that might be influenced, triggered, and maybe even shaped by the media product that is consumed. Still, it is the individual who deliberately and voluntarily controls entertainment; entertainment is not determined by the product. As a human activity, it includes various physiological, cognitive, affective, and behavioral components. Therefore,

entertainment can and should be described and explained by a discipline concerned with human thinking, feeling, and acting. Psychology, particularly motivational psychology, seeks to answer the questions explicated above. In fact, most of the researchers in the tradition of Zillmann refer to psychological theories, or have even developed and explicated their own theories that dwell on psychological processes, assumptions, and models (cf., Bryant, Roskos-Ewoldson, & Cantor, 2003). Zillmann himself has explicated a number of different theories, such as Mood-Management Theory, Affective-Disposition Theory, or Excitation Transfer Theory, which all originate from a psychological understanding of human functioning (cf., Vorderer, 2003). The challenge facing us in the attempt to deepen our understanding of the motivational causes of entertainment is to continue to update our models in light of ongoing advances in psychological theory and research into the causes of human action and behavior. The currently available explanations for why people seek out and enjoy entertainment do not make full use of major theoretical achievements that particular areas within psychology have made more recently.

In this chapter, we would like to focus our attention on two key areas of new work within psychology in order to provide a richer and better grounded causal theory of entertainment. The first of these studies human activities that are characterized as being intrinsically motivated and experienced as being an end in itself. While the study of intrinsic motivation itself goes back to the origins of psychology (e.g., Spencer, 1872-3), the area has been revitalized in recent years by a concerted effort to identify the actual needs that people seek to satisfy with their behavior, to relate the dynamics of intrinsic to extrinsic forms of motivation, and to understand what makes people change their levels of motivation and preferences over time. The second area is evolutionary psychology, which studies the role of natural selection in the design of human cognitive and emotional abilities and proclivities (see the chapter by Ohler & Nieding, in this volume). Following previous work (Steen & Owens, 2001; Tooby & Cosmides, 2001), we

develop the proposal that a suite of adaptations tied to the natural phenomenon of play provides an additional gateway to a better understanding of important aspects of entertainment.

By drawing on these two areas of new work, we wish to emphasize that a coherent theory of entertainment must be able to handle theoretical innovations and new data from two very different perspectives or stances that we may term intentionalist and objectivist. Adopting an intentionalist stance (Dennett, 1987) is to look for the causes of entertainment in people's subjective mental states. Mood Management Theory, for instance, implies an intentionalist stance, where the subjective mental state “mood” and the intention to manage it are attributed to the participants of the study, and by induction to people in general. Intentionalist theories utilize a general understanding of agents in order to formulate causal theories.

In contrast, an objectivist stance assumes that causal relations between material, physiological processes can explain the phenomena (Leslie, 1994). In these theories, people's motivations are understood to be the result of material, physiological processes. What links the adaptive design and the physiological effect together is the notion that the brain is processing information, and that natural selection over long periods of time has the effect of creating organic structures that are optimized for certain kinds of information processing. From this point of view it might be argued, for instance, that the reason people devote time and resources to multiplayer online games is that reward circuits in the nucleus accumbens are activated during this activity. Since major structures in the brain are common to all, this argument can be extended to suggest that natural selection for some other activity, such as rough-and-tumble play (Bjorklund & Pellegrini, 2002) has created a connection between certain forms of play and the brain's reward structures that culture can design dedicated technologies to tap into and activate.

The intentionalist and the objectivist stances rely on different assumptions, argue on different levels of abstraction, and have therefore long been treated as rivaling explanations, their

boundaries delineating the split between the “two cultures” (Snow, 1959/1993) of the humanities and the sciences. Nevertheless, we will present a general framework here suggesting that both types of theories are necessary and complement each other in important ways.

*What is motivation? Seeking an intentional approach to entertainment*

Most of motivational psychology has distinguished between potential causes of human activities as originating either from within an individual or from external sources (Heider, 1958). The differentiation between intrinsically and extrinsically motivated behavior (or action) that developed later stems from this dichotomy. According to this view, external causes initiate and shape extrinsically motivated behavior, particularly with rewards and punishments. Behaviorism, as a school of thought and a research paradigm, dominated psychology for decades of the 20<sup>th</sup> century, and successfully demonstrated how specific rewards and punishments given at various points in time could influence almost all dimensions of human functioning. Intrinsically motivated behavior, on the other hand, is seen as something that has its end in itself. An intrinsically motivated individual behaves or acts for the satisfaction inherent in the behavior he or she performs. Satisfaction may come from positive feelings of being effective (cf., White, 1959), or simply from being the origin of behavior (cf., deCharms, 1968). Following this dichotomy, somebody may devote time to learning a particular subject because he or she wants to do well on an exam (extrinsically motivated) *or* may do so because the subject is fascinating in itself and learning about it is inherently enjoyable (intrinsically motivated).

Although some psychologists have suggested more recently that researchers further differentiate between a “structural sense” (referring to the relation between the activity and its goal) and a “substantive sense” (referring to the type of goal the activity is meant to attain) of intrinsic motivation (cf., e. g. Shah & Kruglanski, 2000), we will use the simple dichotomy here to describe *entertainment as an intrinsically motivated response* to certain media products.

Undoubtedly, cases in which somebody must entertain him- or herself in order to attain a goal that lies outside this activity itself also exist (e.g., a student who must watch a movie in order to criticize it for class, a professor who must play a video game so that he or she can teach about it at school, etc.), but these certainly are not prototypical cases.

Thus, someone who is seeking entertainment usually does so for its own sake, i.e., in order to experience something positive, like enjoyment, suspense, amusement, serenity, etc. (cf., Vorderer, Klimmt, & Ritterfeld, 2004). When this person prepares to be entertained, and when he or she chooses a specific activity or selects a particular product for this purpose, however, this experience itself still lies in the future (though rather near). Take for example the above-mentioned scenario where Rowan gets ready for some entertainment. She sits in front of her TV with a laptop and a supply of chips not because of an entertainment experience she is already having, but because of one she is expecting to have. In other words, she directs her activity towards a future psychological state that so far is only represented in her mind. Representations like this future state are usually considered goals, and individuals appear to be able to regulate their activities towards these goals.

What kinds of activities hold intrinsic interest for people? According to Ryan and Deci (2000), these activities need to have the appeal of novelty (cf., also Berlyne, 1971; 1974), challenge (Csikszentmihalyi, 1975), or aesthetic value. Following the observation that, from the time of birth, children are active, curious, and playful, even in the absence of rewards, Ryan and Deci (2000; see also Ryan, 1995) regard intrinsic motivation as a construct that “describes this natural inclination toward assimilation, mastery, spontaneous interest, and exploration” (p. 70; also see Kelly, 1955, as an early example of such a model). Their cognitive evaluation theory (Deci & Ryan, 1985) aims to specify factors that explain variability in intrinsic motivation. The theory is based on the assumption that humans have three fundamental needs, and that the

satisfaction of these needs is essential and crucial not only for an individual's intrinsic motivation, but for the person's well-being and mental health more generally, as well. They claim a need for *competence* and a need for *autonomy*. In fact, empirical research in line with this theory shows that social-contextual factors (e.g., feedback) that support feelings of competence during a given action enhance intrinsic motivation for that action, as much as optimal challenges and freedom from demeaning evaluations facilitate it (Fisher, 1978; Ryan, 1982; deCharms, 1968). They conclude that, in order to maintain intrinsic motivation and perform well, people must perceive their behavior to be self-determined (Reeve, 1996) and autonomous.

Ryan and Deci's so-called self-determination theory (into which the above mentioned cognitive evaluation theory later on seems to have merged) has identified *relatedness* as a third human need that, when satisfied, helps intrinsic motivation flourish. I.e., a secure relational base between an individual and another person (parent, teacher, peer, friend, etc.) is not only important for infants to explore their early environments but also impacts (intrinsic) activities over their life spans. Ryan and Deci (2000) stipulate that the three needs are universal and developmentally persistent, although their relative salience and the ways these needs can be satisfied may change across the life span. Also, there is little doubt that the modes of expression of these needs may vary in different cultures: "The very fact that need satisfaction is facilitated by the internalization and integration of culturally endorsed values and behaviors suggests that individuals are likely to express their competence, autonomy, and relatedness differently within cultures that hold different values" (Ryan & Deci, 2000, p. 75).

#### *Entertainment as intrinsically motivated experience*

We want to use self-determination theory to explain people's overall interest in entertainment by suggesting that media consumption in general and the use of entertainment



media products in particular provide specific ways to satisfy the fundamental psychological needs proposed. First, exposure to entertainment products is usually an activity that has its end in itself and thereby qualifies as being intrinsically motivated. It serves all three fundamental needs of competence, autonomy, and relatedness, although these needs materialize differently over a life span, in different cultures, situations, and even personalities. But entertainment products are suitable to use nearly anywhere and anytime.

As far as the need for *competence* is concerned, it is interesting to note that television use in particular often has been considered to be “easy,” while reading frequently is regarded by many as “tough,” or requiring effort. Salomon (1984) has shown that the cognitive activity invested in following TV programs is rather low, and that most audiences select programs that are not overly challenging (see also Weidenmann, 1989). Henning and Vorderer (2001) demonstrated that massive consumption of TV is correlated with a rather low need for cognition. Groeben and Vorderer (1988) have followed Berlyne’s (1971; 1974) motivational theory of aesthetic appreciation and argued that readers of literary texts usually select and particularly enjoy texts that challenge them—but only up to the point where they can still master the challenge. In sum, entertainment has almost always been described as an activity where there is rather little challenge, or only as much challenge as the media user can still handle successfully. This of course would be the optimal challenge, the level that allows people to feel the greatest sense of competence. The feeling of competence is therefore almost guaranteed, and it can be created without much effort. Where else can somebody feel competent so often, so easily, and so profoundly as in a situation of entertainment? Video games, which appear to be among the most appealing facilitators of entertainment these days, particularly among younger males (as an overview: Vorderer & Bryant, in press), provide an excellent example of this. The level of complexity, difficulty and challenge of a given game varies and is dependent on the settings that

are either chosen by the player or automatically set by the game. The game itself may choose an optimal difficulty level based on the amount of skill or expertise a player has demonstrated previously. In other words, a video game guarantees the player to be challenged at a level he or she can master without becoming bored or overwhelmed. The importance of competition and challenge for a video game player's entertainment experience that is often mentioned (e.g., Vorderer, Bryant, Weber, & Pieper, in press) seems to support the notion that individuals often seek to experience competence in entertainment. As in the example of Rowan's entertainment experience described above, we can consider how carefully she prepares for a situation in which she will be able to avoid boredom and find some challenge (which is why she chooses to use different media at the same time) while making sure that this situation will not overwhelm her or give her a sense of being incompetent.

With respect to the need for *autonomy*, it is also obvious that exposure to a particular entertainment program typically fits the description of an activity that is not forced, influenced, or triggered by others. While there is little doubt that entertainment users may be influenced by their peers' attitudes, preferences, and values in selecting specific entertainment products, most users do not consider themselves to be subject to such influences. Indeed, media users typically overestimate their independence from outside influences and see their choices as directed by their individual interests and preferences (references?). This biased self-view has consequences for an entire research paradigm on uses and gratifications (Rosengren, Wenner, & Palmgreen, 1985; Rubin, 2002), where the motivational question is answered by summarizing the various responses that are given by research participants. The uses and gratifications-paradigm assumes that respondents are fully aware of their own motives and able and willing to express them accurately. Verbal reports provided by the subjects are thus considered valid and sufficient evidence. Although this approach has been questioned and criticized for a range of reasons (e.g.,

Zillmann, 1985), what matters in the present context is that the approach will tend to perpetuate an exaggerated assessment of a person's autonomy. Certainly, it confirms that people tend to see themselves as highly self-directed. The free availability of media entertainment products almost anywhere and at any time provide users with the objective circumstances that makes the experience of autonomy easy to sustain. The perception of unconstrained choice also gives users a sense that the activity is absent outside control. In our original example, it appears that Rowan believes she is selecting *ER* on TV as her favorite show, whereas positive appraisals of the show by her peers may in fact be highly influential.

Finally, as far as *relatedness* is concerned—that is, the need to feel in touch with somebody else—an extensive body of literature shows that TV especially provides its users with a sense of relatedness, even in situations when they are watching alone. The connection that some viewers feel with hosts, anchormen and -women, or other media personae who appear to be addressing a single member of the audience, gave way to the study of so-called parasocial interactions and parasocial relations (originally: Horton & Wohl, 1956; see the chapter by Klimmt, Hartmann & Schramm in this volume). This research shows that media users do not sense that they are alone. They usually feel connected and related to characters in movies, shows, novels, and even video games. The sense of parasocially interacting, or having a relationship with a media figure, accounts for much of the interest in specific programs. Some users may go so far as to admire and adore some persona and select a movie, a book, or a game primarily—or even exclusively—because of the person or character's role in it. Parasocial interaction explains the prominence of celebrities for entertainment products, which leads many to consume media for the purpose of connecting or relating to such a celebrity.

Affective Disposition-Theory also explains how the audience's moral judgments of the characters' behavior lead to either hopes or fears about the characters' fortune and subsequently

to empathy or counter-empathy with them. Again applied to Rowan's situation described above, we understand that she intends to relate to a friend through messaging, presumably about the TV show she is going to watch, and maybe also about one or more personae of this show. This could be a character, e.g., Dr. Carter, who has been part of this show from its very beginning in 1994, or it could be Noah Wyle, the actor playing this character. Such examples suggest the impact on media users of real or fictional personae in the media, and the effectiveness of entertainment products in creating the impression of being related, thereby satisfying the third fundamental need proposed by Ryan and Deci (2000).

So far, we have focused on recent work in the psychology of intrinsically motivated behavior. We now propose to broaden the perspective by situating intrinsically motivated behaviors within an evolutionary perspective, thus adopting an objectivist stance in which causal material processes are invoked to explain the design and functioning of the mind.

*What is function? Seeking an objectivist approach to entertainment*

At first blush, a theory of human behavior that holds that the behavior is engaged in for its own sake may appear to pose a challenge to an evolutionary account. Evolution is the story of functional outcomes, and an activity that is indifferent to its own consequences would appear to elude the dragnet of biology altogether. Although we will show that this reasoning is fallacious, the task of clearing up the fallacy will allow us to characterize in a more precise manner what is distinctive about entertainment.

As the French materialist philosopher Maupertuis (1745) realized more than a century before Darwin, organic design can be explained by a dynamic process of incremental change from generation to generation (cf., Glass, 1959). Over a multiplicity of individual events, organisms with a physiology that provide a better fit with their environment have a greater chance of surviving to leave offspring. An organism without a mouth, Maupertuis reasoned,

would be unable to eat, and thus die without issue. Central to Maupertuis' argument, later formalized by Darwin, is the notion of a biological function. A theory of the biological function of an organ, such as a mouth, explains the precise organic design of the mouth—the presence of an opening, of teeth, of a tongue, of saliva glands, and so on—as a result of a historical process over a large number of generations. Those individuals who were endowed with a well-engineered mouth, given their local environment, tended on average to leave more offspring, thus making that particular design more common in the population.

Within evolutionary theory, the generalization of physiological design to behavior is not unproblematic. It does not follow, for instance, from the notion that organic design is the outcome of a long period of natural selection, that an organism's behavior is similarly determined by this history. In the case of human beings, for instance, our full range of possible activities cannot be determined by an examination of our history, however exhaustive. There is a very simple reason for this: our physiology, including that of our brain and nervous system, enable us to engage in a far larger number of activities than natural selection has acted on. We must therefore distinguish between the *biological* function of a particular organ and its *actual* function. While the biological function of the mouth, in Millikan's term, is the function the mouth was designed to solve, by virtue of its past successes (Millikan, 1984, 1993), its actual function may include such evolutionarily novel activities as sucking on a cigarette, inflating a balloon, and playing a Jew's harp.

In a word, the causal link between natural selection and behavior is attenuated by the intermediation of psychology. It is here we encounter the first clue to the misunderstanding that evolutionary theories cannot comprehend intrinsically rewarding activities. Yet it is not altogether simple to navigate the strait between the Scylla of a total evolutionary reductionism on

the one hand, and the Charybdis of a vision of human psychology untouched by biological history on the other.

Consider the case of a series of activities that human beings find intrinsically enjoyable, yet would not characterize as entertainment—activities such as eating, sleeping, and sexual intercourse. To engage in these activities, we do not typically need an extrinsic reward; they are experienced as ends in themselves. We sit down and eat when we are in a physiological and mental state that makes food taste good, and we stop eating when that state has passed. Now, does this mean that our behavior was caused by our biological history?

In part, we would have to reply “yes”—in consonance with Maupertuis, the individual who lacked the psychological states of hunger, who did not experience a desire for the food placed in front of him, and who did not persist in the activity of eating until he had acquired an adequate amount of nourishment, that individual would surely die. Hunger has a biological function: to ensure that we eat and nourish ourselves. Thus, the explanation that was used to explain the design of the mouth can be extended to include the design of the appetites and the preferences that regulate what goes into the mouth. Yet at the same time, the food we put on the table today consists largely of items that are evolutionarily novel—that, as it were, natural selection has never seen. Potato chips and sugar-frosted doughnuts did not form part of our ancestors' diet, and our preferences cannot therefore have evolved to prefer them. In fact the food we just ate may not be nourishing us at all; on the contrary, it might just as likely be slowly killing us off, as we participate in an unprecedented national epidemic of obesity.

While natural selection built the structures that underpin our motivational systems, they operate correctly only in an environment that resembles or approximately reproduces the environment in which these structures themselves evolved. It is as if nature designed a tricycle, and culture built a freeway for it. Or to invert the metaphor: as if nature constructed a

supercomputer, and culture posed it the problem of which color soap to buy. There is a radical disjunction between the environment in which most of our evolution took place—what Bowlby (1964; cf., Foley, 1995) called “the environment of evolutionary adaptedness”—and our present socially and technologically transformed reality. This disjunction, referred to as adaptive or phenotypic lag, is a general result of changing environmental conditions; in the human case, the effect is vastly speeded up and magnified by our capacity to imagine and create realities without precedence in nature. To claim that the mental state of hunger and the act of eating has a biological function, then, is not to claim that, in any given meal, they actually provide the benefits that the adaptation was designed to provide. Human psychology is optimized for an environment that no longer exists, and culture generates products that target psychological adaptations in a manner that need not be advantageous to the individual, either in terms of survival or reproduction.

Although natural selection operates on outcomes, behavior itself cannot be inherited. Rather, what can be passed on through genetic material is the ability and proclivity to engage in particular types of behavior under perceived types of circumstances. Such abilities, proclivities, and perceptions belong to the domain of psychology. Evolution, then, generates a psychology that has its own priorities, only indirectly connected to the logic of natural selection. In a celebrated and maligned formulation, Herbert Spencer compressed Darwin's theory into a single phrase, “the survival of the fittest” (1861). He used this phrase to justify a certain vision of society, that of Social Darwinism, where nature was seen to bestow a normative blessing on successful competitive social climbers. Among other things, Spencer's motto inadvertently and inappropriately collapses the logic of natural selection onto human motivational psychology. Just because a biologist finds the concept of fitness useful in understanding the emergence of organic design doesn't mean that human beings are psychologically motivated to maximize this quantity.

If human beings truly were fitness maximizers, following the supposed call of nature to leave as many descendants as possible, they would be paying their last savings to be allowed to donate their eggs and sperm to childless couples and sperm banks. Clearly this is not happening: there is nothing in human psychology committed to maximizing what a biologist terms fitness.

In the case of eating, sleeping, and sexual intercourse, it is not difficult to demonstrate that these activities fit the evolutionary paradigm, with the qualification that psychology must be accorded a degree of autonomy. Although these behaviors are subjectively experienced as intrinsically rewarding, an evolutionary account would point out that this psychological intermediation is itself designed by natural selection to encourage and sustain the biological functions of acquiring nourishment, rest, and producing offspring. In this view, the behavior is intrinsically rewarding precisely because, over evolutionary history, they on average promoted an underlying biological function.

This line of reasoning nevertheless leaves the question this chapter addresses unanswered: what, if any, is the biological function of entertainment? Returning to Rowan's situation described earlier, does her very modern behavior have an ancient antecedent, and does her appetite for television, and her preference for certain programs, reflect the operation, in a novel environment, of an ancestral adaptation? One can certainly be forgiven for thinking that natural selection simply cannot be invoked to explain her enjoyment of *Ferris Bueller's Day Off* in particular or her enjoyment of television and movies in general. To show how our evolutionary history is relevant to contemporary forms of entertainment, we need a better model of what is distinctive about the activity of being entertained.

We propose that what distinguishes entertainment from other forms of intrinsically motivating activities is that in the case of activities such as eating, sleeping, and sexual intercourse, the purpose of the activity is to change the state of the world. When somebody is



hungry, he or she enjoys eating, and the act of eating moves nourishment from outside the body to the inside. If that somehow didn't happen, the behavior would not be fully satisfied. Imagine, for instance, that somebody was given delicious food, and that this person enjoyed the activity of having it in the mouth and chewing it, but was not allowed to swallow. Such an experience might well be extremely frustrating, and we would ascribe this frustration to a design feature, whose purpose it is to ensure that eating actually delivers its biological result of nourishment.

What is puzzling about entertainment is that it appears to fail to deliver the real thing, and to fail by design. A key feature of entertainment is pretense: in the case of Rowan, for instance, she treats the flickering lights on the screen in some way *as if* they were real events she was observing, and the actors and actresses in the movie merely pretend that they have the concerns and the emotions they appear to have. In fact, even the buildings, streets, and natural surroundings may be pretend-houses of cardboard, fake studio set streets, and painted or digitally added backdrops. When a patient is rushed to the operating table in *ER*, he or she doesn't actually undergo surgery at all; there is just the pretense of cutting and sutures. Yet in contrast to the case of other intrinsically motivating activities, when somebody is being entertained, this person appears to be satisfied by make-believe, and indeed to prefer a simulacrum over reality itself.

These features of entertainment indicate that its biological function is of a character distinct from that of other forms of intrinsically motivated behaviors. To understand what this function might be, we need to develop a more detailed understanding of what the mind is doing when it is engaged in an act of entertainment—we need a cognitive model.

#### *A cognitive model for the study of entertainment*

The first coherent theory of fiction-based forms of entertainment is Aristotle's (350 BC) notion that the verbal arts and music are forms of *mimesis*, traditionally translated as 'imitation':

Epic poetry and Tragedy, Comedy also and Dithyrambic poetry, and the music of the flute and of the lyre in most of their forms, are all in their general conception modes of imitation (*Poetics*, I.i).

Following Stephenson (1967) and Oatley (1994), we argue that modern technology has provided us with a more potent concept for the arts, namely that of simulation. In a simulation, substitute objects are used to enact the core causal relations of a target phenomenon. Climate modeling, for instance, uses computers to generate a virtual earth with a digital atmosphere warmed by a make-believe sun, in such a manner that the causal relations of the real earth and sun can be systematically investigated. The model is necessarily partial, providing only a selective congruence of entailment structures, or it would be useless, like the map in Borges' story, which entirely covers the territory.

Because simulations selectively preserve causal relations, they are useful for training purposes, allowing you to acquire an understanding of a significant subset of causal relations without incurring the cost of experimenting with the phenomenon itself. An F16 flight simulator, for instance, allows a novice to acquire experience and practical skills in manipulating a single-seat airplane without risking the loss of life and a multi-million-dollar fighter jet.

Similarly, fiction-based forms of entertainment may be coherently understood as a species of simulation. The *ER* that Rowan watches, for instance, is not a literal recording of an actual emergency room, but a choreographed simulation using substitute agents and objects – actors instead of doctors, nurses, and injury victims; stage sets instead of real hospitals. The entertaining simulation is superior to an actual recording for two reasons. First of all, a literal recording would be hard to understand. Patients and people would come go, and a live recording would lack the background and contextual information that allows an outsider to make sense of what is happening. A fictional recreation of the events, in contrast, will typically focus on a

manageable number of patients and doctors, and provide the viewer with the contextual information. In fact, fictive entertainment not only portrays the core causal relations of the target phenomenon; it makes these relations hyperintelligible (cf. Steen, 2005). In *The Distinction of Fiction*, Cohn (1999) argues that fictional narrative characteristically employs “narrative situations that open to inside views of the characters' minds” (vii), rendering the relations between perception, thought, emotion, and action transparent and visible to the reader or spectator. For a striking technologically updated instantiation of this general feature of fiction, consider the dramatic visualizations of the heroine's mental states in the television series *Ally McBeal*. Such a feature of fiction-based forms of entertainment is consistent with the notion that the events portrayed are simulations rather than imitations of events: through the use of sets, actors, and scripts, they enact the core relations that characterize the target phenomenon.

The second reason a fictional enactment is superior to a literal, historical recording is that the latter would in most cases be mind-numbingly boring. Fiction is a simulation crafted not only to be hyperintelligible, but to reveal a range of different aspects and possibilities of the state space modeled. There is a constant premium on novelty at the level of the core relations modeled, typically achieved by introducing some new element in every episode and exploring the entailments of this new element from different angles. A continuous generation of this kind of novelty is closely tied to the experience of entertainment as intrinsically rewarding, as argued by Ryan and Deci (2000).

Our sketch of a cognitive model of entertainment, then, identifies it as a form of simulation, a dynamic model relying on substitute agents and objects that maintains a selective congruence of entailments. The simulation is prototypically focused on the domain of human action and characterized by a level of intelligibility of human relations exceeding those of real-life interactions, a constant exploration of variations in the core relations modeled, and an

intrinsic motivation. From an evolutionary perspective, the question can now be asked: why do human beings engage in an activity structured in this manner at all, and why is it subjectively experienced as intrinsically motivating? Why would a skillfully created fiction-based presentation of an emergency room be *entertaining*?

### *Entertainment as play*

The key to answering this question lies in the phenomenon of play (for an overview, see Vorderer, 2001; 2003). Already Aristotle (350 BC) traces mimesis back to a natural proclivity in animals. “The instinct of imitation,” he argues, “is implanted in man from childhood, one difference between him and other animals being that he is the most imitative of living creatures, and through imitation learns his earliest lessons; and no less universal is the pleasure felt in things imitated” (*Poetics* I.iv). Aristotle here identifies four natural dimensions of play: its presence in several species of animals, its reliable expression in development, its pedagogical effect, and its inherent motivation. In contemporary terms, play has been found to be primarily a mammalian adaptation (Burghardt, 1984), and to be particularly important in infancy (Fagen, 1981). Its main pedagogical effect may be behavioral flexibility (Fagen, 1975). A long tradition from Groos (1898) onwards has attempted to make sense of its apparent frivolity or purposelessness; a prominent definition of play is that it encompasses “all motor activity performed postnatally that *appears* to be purposeless, in which motor patterns from other contexts may often be used in modified forms and altered temporal sequencing” (Bekoff and Byers (1981, pp. 300-301). As Rubin, Fein, and Vandenberg (1983) put it, “Play is intrinsically motivated.”

Play is a credible developmental and evolutionary antecedent to the more sophisticated forms of entertainment we engage in today. Clear continuities exist between animal and human play. In a study of elementary forms of children's play, Steen & Owens (2001) seek to show that

the activity of chase play is structured as a form of predator-evasion training, a form of play ubiquitous in mammals. They argue that play is an evolved pedagogy making use of simulations to lower the cost of learning. Children's play possesses the core features of simulations, such as the congruence of entailments with the situation modeled. Kavenaugh and Harris (1994) demonstrated in a series of experiments that children engaging in play are reliably able to track the causal consequences of pretend manipulations, so that for instance if you immerse a teddy bear into a pretend bath, it becomes wet (cf., Harris, 2000). The complex cognitive machinery required to understand an episode of *ER* has a long biological and developmental history.

The evolutionary argument is that natural selection would favor cognitive adaptations supporting the capacity for and proclivity towards simulation in what was at first a relatively narrow range of situations, namely in cases where high levels of skill are required, and the risk of failure is high (Steen & Owens, 2001). The prototypical situation is predation, or more generally high-stakes adversarial encounters. In brief, natural selection may have favored individuals who engaged in forms of play that trained them in skills relevant for predation. Such play would have functioned to build skills without having to incur the cost of actually encountering the predator.

An adaptation for learning from play would need to be intrinsically motivating. The virtues of practicing behavioral simulations for an event that has not yet taken place would be lost on young animals and children; they lack the cognitive apparatus for imagining the potentially lethal consequences of not being prepared when the predator arrives. This is why play is inherently gratifying, without seeming to care about the outcome: natural selection has built into the mind a natural delight in a range of activities, for reasons the individual need not concern herself with. The natural pedagogy of play and entertainment is no less effective for us not realizing that the biological function of the activity is learning.

An evolutionary theory of play, drawing on a cognitive model of entertainment as a form of simulation, yields a very simple proposition. It suggests that the biological function of entertainment is learning, that this learning is accomplished by means of cognitive adaptations for running, understanding, and parsing simulations, and that the pleasure and enjoyment we feel in fiction-based forms of entertainment is a necessary design feature of this natural pedagogical system. Since the *actual* function of an adaptation can differ greatly from its *biological* or evolved function, an evolutionary theory of entertainment does not amount to a claim that modern forms of entertainment in fact deliver genuine educational benefits. The theoretical significance of an evolutionary model is above all that it alerts us to the possibility that an underlying biological function of learning is regulating entertainment preferences, even in a world that has long since outrun the environment in which human being evolved.

*Toward an integrated model of entertainment*

In this chapter, we have introduced two broad types of models to explain what motivates people to seek out entertainment. Entertainment theory, we suggest, will benefit from adopting a mix of intentional and objectivist stances. Recent work in the psychology of intrinsically motivating behaviors allows us to situate entertainment in terms of an intrinsically motivated response to a set of entertainment opportunities. Specifically, we apply and extend Ryan and Deci's (2000) self-determination theory to the phenomenon of entertainment, emphasizing the centrality of autonomy, competence, and relatedness. We would like to end by demonstrating how these dimensions of intrinsically motivating responses to entertainment can both illuminate and be illuminated by our understanding of the evolutionary ancestry of entertainment in play.

In order to meaningfully relate the intentional and objectivist stances, we have sought to develop a core cognitive model of entertainment. We build on the work of Aristotle (350 BC), Stephenson (1967), and Oatley (1994) to suggest that entertainment can coherently be

understood as a form of simulation. A simulation, we now argue, is uniquely suited to facilitating the experience of autonomy and competence that Ryan and Deci (2000) propose are core characteristics of intrinsically motivating experiences. Simulations model a phenomenon by the use of substitute agents and objects, selectively conserving causal relations. This loose and facultative relation between reality and entertainment provides both creators and audiences with a vast opportunity space. Because causal relations are selectively imported, agents retain an autonomy over the model that is unattainable in real life. Moreover, this autonomy can be utilized to fine-tune the selective importation of causal relations, so as to produce optimal challenges that generate the gratifying experience of competence.

These features of entertainment, we suggest, are in turn recognizable as design features of an evolved system whose biological function is learning. By creating a make-believe scenario in which the child can pretend to be, in certain controlled respects, a fearsome lion, or a prey animal escaping a monster, the child is able to assert his autonomy over the situation and indeed to direct the behavior of adults who wish to join in the play (Steen & Owens, 2001). In so doing, the child is also able and motivated to create challenges that are precisely optimized for his or her personal and temporally specific appetite for skill acquisition. This provides the child with an unparalleled opportunity to create a sustained and intensely gratifying experience of competence and mastery. As Csikszentmihalyi (1975) points out, the enjoyment deriving from mastery is not merely an affirmation of a routine and tested ability; it is a successful movement into a new area of competence. In terms of biological function, the subjective phenomenology of competence is a sign to the organism that it has mastered an adaptively significant challenge.

The third cardinal element of Ryan and Deci's (2000) self-determination theory is that of relatedness, and we argued in some detail above that entertainment provide a rich opportunity and experience of becoming closely related to others. In terms of the evolutionary model, the

dimension of relatedness prompts us to supplement the pan-mammalian model described above with a distinctively human extension. For the case of animal play, we argued that a core adaptive target was high-stakes adversarial encounters. While the theme of chase and mortal conflict is certainly a key theme in entertainment—*ER*, for instance, may heighten interest by dealing with life and death—this is clearly not in itself sufficient to make a television series attractive to watch as entertainment, nor is it central to what makes the series entertaining. In fact human play, starting with young children, adds a dramatically different dimension to the underlying primate and mammalian base. From an early age, children's play is primarily focused on human relations, and specifically on the complex relations between perception, thought, and action, represented in social roleplay and collaborative narrative play. In adult forms of entertainment, elementary forms of make-believe are elaborated into myths, tragedies, and Hollywood blockbusters (cf., Goldman, 1998). Entertainment, then, involves the exploration of relationships through simulations that permit individuals to *identify* with substitute agents (cf., Steen, Greenfield, Davies, & Tynes, in press) and thus create the subjective experience of relationships.

We suggest that the model we have sketched in this chapter, uniting work in the psychology of intrinsic motivation, the cognitive analysis of fiction-based forms of entertainment, and the evolutionary and developmental psychology of play, provides an integrated causal model for the study of entertainment. This model opens for a systematic experimental study of entertainment motivation. The utility of such an overarching theory is above all to help us formulate coherent research hypothesis about what types of information viewers and audiences may be searching for when then set themselves down before a television, a movie screen, or a theatrical performance, or perform a skit or play before their friends, one night when they are free to do exactly as they please.



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