Play as a Consumption Experience: The Roles of Emotions, Performance, and Personality in the Enjoyment of Games

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Consumer researchers have recently begun to focus on the experiential aspects of consumption in general and on intrinsically motivated hedonic enjoyment in particular. Within this broad class of consumer behavior, play (as in sports, games, and other leisure activities) constitutes a particularly familiar and important type of consumption experience. This study investigates some phenomena involved in playful consumption. The results suggest that performance, perceived complexity, and personality–game congruity determine emotional responses and that performance itself depends both on previous performance and on various ability-related individual characteristics. Though still tentative, such findings indicate an important role for the competence motive in the enjoyment of games.

Recent work in consumer research has focused increasingly on the more symbolic, emotive, and esthetic sides of consumer behavior. Several authors have argued that such work represents an emerging shift of attention toward some important but previously neglected aspects of the consumption experience (Holbrook and Hirschman 1982; Sheth 1979). Briefly, the consumer's behavior includes hedonic elements of fantasies, feelings, and fun that deserve to be examined in their own right, apart from whatever direct connection they may have with purchasing decisions (Hirschman and Holbrook 1982). Consumers do more than simply process information to make buying choices (Olshavsky and Granbois 1979). They also engage in imaginative, emotional, and appreciative consumption experiences (Woods 1981). This contrast serves as the basis for such distinctions as buying vs. consuming (Alderson 1957), choosing vs. using (Holbrook, Lehmann, and O'Shaughnessy 1983), purchase vs. product involvement (Bloch and Bruce 1984), and informational vs. transformational advertising (Puto and Wells 1984).

Traditionally, hedonic consumption experiences have prompted far less empirical work than have consumer choices or buying decisions. As one step toward redressing this imbalance, the present paper reports a study of playful consumption as illustrated by the interrelated roles of emotions, performance, and personality in the enjoyment of games. In particular, we focus on the relationships among a key personality variable (verbalizing/visualizing), type of game (verbal/visual), performance (success/failure), perceptions (complexity), and emotions (pleasure, arousal, and dominance) in a playful consumption experience. First, we offer introductory reviews of these aspects of consumer behavior. Next, we propose some hypothesized relationships among these variables. We then describe an experiment that examined these relationships in an empirical study of playful consumption.

CONCEPTUAL BACKGROUND

Play and Intrinsic Motivation

Playful consumption belongs to a broad class of intrinsically motivated consumer behavior that includes leisure activities (Unger and Kernan 1983), hobbies (Bloch and Bruce 1984), creativity (Hirschman 1983), games (Huizinga 1938), sports (Mihalich 1982), and esthetic ap-

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preciation (Osborne 1979). All such intrinsically motivated phenomena involve the expenditure of time on activities that produce experiences enjoyed for their own sake (Deci 1975). Such experiences are referred to variously as "ludic" (Berlyne 1960), "autotelic" (Csikszentmihalyi 1975), "inherently pleasurable" (Calder and Staw 1975), "nonutilitarian" (Hutt 1981), or "galumphing" (Miller 1973).

In describing these ludic or autotelic aspects of intrinsically motivated behavior, both Berlyne (1969) and Deci (1975) have noted the consummatory role played by inner consequences. Specifically, Deci (1975) adopts what he calls "a hedonistic position" by stressing the rewarding properties of internal states involving positive affect or feelings of satisfaction. Calder and Staw (1975) describe these states by such terms as "interesting," "exciting," "pleasurable," and "enjoyable."

Focus on these inner consequences has encouraged the increasingly phenomenological conceptualization of play as "immediate experience" (Stephenson 1967), "the leisure experience" (Neulinger 1981), and "the sporting experience" (Mihalich 1982). For example, Lewis (1982) emphasizes the "internal, affective nature" of the play experience and concludes that "the importance and meaning of play . . . would appear to be in its affective functions; in a word, play is fun." (p. 166). Similarly, Csikszentmihalyi (1975) has explored the phenomenology of play in what he calls "flow experiences . . . so enjoyable that . . . the doing is the thing" (p. 37).

In short, satisfaction, enjoyment, fun, and other hedonic aspects of the consumption experience have been widely regarded as the essence of play and other leisure activities (Neulinger 1981; Unger and Kernan 1983; Wilson 1981). This means that playful consumption must be understood in terms of the emotional responses that compose its phenomenology.

Emotional Responses to Play

Beyond the level of simple affective liking/disliking (an oft-studied determinant of consumer choices), the types, structures, and functions of emotions in the intrinsically motivated consumption experience are, as yet, poorly understood. Intrinsic motivation has most frequently been measured by behavioral assessments of the amount of time spent on some activity in a free-choice situation (e.g., Deci 1975; Lepper and Greene 1975). Less often, researchers have used self-report measures of "enjoyment" (Harackiewicz 1979), "interest" (Ryan, Mims, and Koestner 1983), or "satisfaction" (Calder and Staw 1975). However, these more introspective or phenomenological scales have correlated with the behavioral indices at only about $r = 0.4$ (Harackiewicz 1979; Ryan et al. 1983), perhaps because they adopt a rather unidimensional view of emotional responses as positive/negative, favorable/unfavorable, or pro/con.

We shall turn, therefore, to a conceptual scheme proposed by Mehrabian and Russell (1974; Mehrabian 1980) and previously used in consumer research by Donovan and Rossiter (1982), among others. Briefly, this paradigm identifies three key components of one's emotional response to the environment: P (pleasure), A (arousal), and D (dominance). These three components have emerged in a number of factor-analytic studies, attaining good reliability and nomological validity. Moreover, they show a clear conceptual parallel to Osgood, Suci, and Tannenbaum's (1957) well-established dimensions of meaning—namely, evaluation, activity, and potency. It seems likely that these same three dimensions should characterize one's emotional responses to intrinsically motivated consumption. Indeed, Day (1981) has explicitly advocated use of the PAD paradigm to investigate feelings toward various types of play.

The Relationship Between Emotions and Performance

Quite plausibly, emotional responses to playful consumption should depend on one's performance. For example, success in a game should enhance one's feelings of pleasure, arousal, and dominance. These emotions might, in turn, contribute to one's subsequent performance. We shall develop these points by briefly considering the nature of games and then inquiring about the role of performance.

As a subcategory of play, games are distinguished by their conformity to an explicit or implicit set of rules (Huizinga 1938; Hutt 1981). According to Winch (1958), "the notion of following a rule is logically inseparable from the notion of *making a mistake*" so that "a rule . . . should enable us to *evaluate* what is being done" (p. 32). Thus, by definition, playing rule-governed games entails the possibility of performing well or poorly. It follows that games provide a forum in which one may demonstrate one's skill so as to reinforce one's sense of competence by displaying mastery and control (Berlyne 1969; Csikszentmihalyi 1975; Neulinger 1981; Wilson 1981).

White (1959) defined "competence" or "effectance" as "an organism's capacity to interact effectively with its environment" (p. 297). The need for competence is central to Deci's (1975) concept of intrinsically motivated behavior, in that intrinsic motivation involves seeking and conquering challenges in a manner that produces positive affect associated with the feeling of efficacy. Much of the empirical work by Deci (1975) and his colleagues has focused on showing that one's intrinsic interest in an activity may be undermined by the introduction of extrinsic rewards (Calder and Staw 1975; Condry 1977; Deci and Ryan 1980; Harackiewicz 1979; Lepper and Greene 1975; Ryan et al. 1983). For example, Deci et al. (1981) suggest that winning an interpersonal competition must be viewed as an extrinsic reward that tends to decrease intrinsic motivation. Hence, an orientation toward victory or beating the opponent removes some games from the context of pure play or leisure by introducing

an element of extrinsic motivation or work (Mihalich 1982; Miller 1973; Wilson 1981).

As long as performance in games remains intrinsically motivated, we may expect success to promote favorable emotional responses. Thus, many studies have shown that positive feedback concerning success tends to increase behaviorally assessed intrinsic motivation or self-reported enjoyment (Deci and Ryan 1980). This effect operates only so long as such feedback is perceived as informational rather than controlling in intent (Deci and Ryan 1980; Pittman et al. 1980; Ryan et al. 1983).

Whether favorable emotional responses should enhance subsequent performance is somewhat more problematic. In sympathy with humanistic psychology, Deci (1975) implies that positive affect associated with intrinsic motivation should contribute to future success: "intrinsic motivation . . . appears to motivate effective performance at the same time that it satisfies intrinsic needs" (p. 227). However, he acknowledges that "there is not yet unequivocal support for the position" (p. 226). Indeed, only Harackiewicz (1979) appears to have found a weak but significant correlation between pretested enjoyment and subsequent task performance ($r = 0.20$). Accordingly, one should maintain some circumspection in anticipating an effect of emotions on subsequent performance in playing games.

Finally, we would expect current performance in playing a game to contribute positively to subsequent performance. Feather (1968) has demonstrated such an effect repeatedly by showing that success on a task positively influences future performance on the same task. He proposes that this relationship may be due to learning effects or to motivational effects.

The Intervening Role of Perceived Complexity

We would also expect performance and emotions (PAD) to depend on various intervening perceptions. In particular, complexity is a perception of special relevance to the intrinsically motivated playful consumption of games (Deci 1975). First, greater complexity should place greater demands on cognitive capacity and should thereby exert a negative effect on performance. Second, numerous studies have shown emotional consequences of complexity in various intrinsically motivated tasks. Specifically, complexity appears to exert nonmonotonic effects on pleasure (Berlyne and Madsen 1973), positive monotonic effects on arousal (Berlyne 1960), and negative monotonic effects on feelings of dominance (Mehrabian 1980). Third, perceived complexity should increase (decrease) as the result of failure (success). Overall, perceived complexity should thus play an intervening role as a mediating link between prior and subsequent performance.

The Match Between Type of Game and Personality

Both emotions and performance should also depend on how a consumer's personality interacts with the nature of the game being played. Here one might identify many personality variables of potential interest (e.g., variety seeking, sensation seeking, innovativeness, or hedonism). However, a personality characteristic particularly relevant to the case of games appears to be one's tendency toward visualization as opposed to verbalization (Hilgard 1981; Kaufmann 1979; Paivio 1971; Richardson 1969).

Consumer researchers have recently recognized the important role of visualization/verbalization from a number of different perspectives that encompass (1) Paivio's (1971) dual-coding hypothesis concerning separate verbal and imagery processing systems; (2) hemispheric specialization between the left and right brains (Hansen 1981); (3) the psychobiological concomitants of various kinds of information-processing activity (Kroeber-Riel 1979); and (4) the role of individual differences in visualizing/verbalizing tendencies (Childers, Houston, and Ruekert 1983).

From among these related perspectives, one proposition seems to emerge clearly: if people show differential preferences for visual processing (visualizers) vs. verbal processing (verbalizers), then these personality types should show different emotional responses and performance outcomes in more visual vs. more verbal games. Accordingly, we anticipated an interaction effect in the relationship of emotions and performance to personality (visualizer/verbalizer) and type of game (visual/verbal). Specifically, links between visualizing (verbalizing) tendencies and emotions or performance should be relatively more positive for visual (verbal) games. In what follows, we shall call this the facilitating effect of "personality–game congruity."

Controlling for Ability-Related Variables

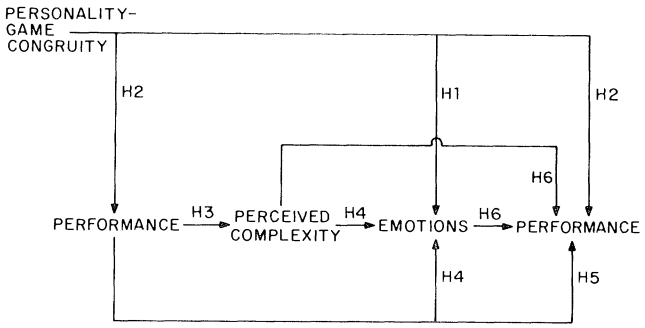
In the present study, we had no way of obtaining direct measures of prior game-playing ability. However, we did collect several measures of individual characteristics such as age, sex, verbal aptitude, quantitative aptitude, and game ownership. These characteristics were thought to be potential indices of game-related expertise or skill. No prior hypotheses were formulated concerning their possible effects on perceptions, emotions, or performance. Nevertheless, such ability-related variables were included in the analysis as covariates to control for their possible influence as extraneous sources of variance and to explore the nature of their potential role in the game-playing experience.

Model of the Enjoyment of Games

The foregoing conceptual underpinnings suggested a model of the enjoyment of games shown in Figure A. In this model, emotions depend on personality–game congruity, performance, and perceived complexity. They are assumed to be relatively acute or transitory and hence not to depend on previous emotions. In contrast, performance is assumed to reflect more chronic factors associated with ability and learning, so that it should depend on previous performance as well as on personality–game congruity, perceived complexity, and emotions.

FIGURE A

A CONCEPTUAL MODEL OF THE ENJOYMENT OF GAMES



The linkages shown in Figure A suggest a more detailed set of six a priori hypotheses relevant to the consumption experience involved in playing games. In the diagram, these hypotheses are identified by labels H1 to H6.

A Priori Hypotheses

Here we shall formulate the hypotheses in general terms. Later, we shall restate them more precisely as specific working hypotheses that incorporate our operational definitions:

H1: According to the aforementioned facilitating effect, emotional responses (e.g., PAD) should depend on personality–game congruity. Specifically, the effects on pleasure, arousal, and dominance of the tendency to visualize (verbalize) should be relatively more positive for visual (verbal) games.

H2: Similarly, performance (success) should also depend on personality–game congruity so that visualizers (verbalizers) are relatively more likely to succeed at visual (verbal) games.

H3: Perceived complexity should depend on performance, increasing with failure and decreasing with success.

H4: Performance and complexity should affect emotional responses. Thus pleasure, arousal, and dominance should vary positively with performance, while the effects of complexity should be positive or nonmonotonic for pleasure, positive for arousal, and negative for dominance.

H5: Performance should persist—i.e., previous performance should reflect ability and learning and should therefore be positively related to subsequent performance.

H6: Emotions and perceived complexity should also affect subsequent performance. Specifically, feelings of pleasure, arousal, and dominance should all enhance subsequent performance, while greater complexity (with emotions controlled for) should interfere with information processing and should thereby damage performance.

Illustrative Study

We conducted an illustrative study intended as a first step toward the investigation of intrinsically motivated playful consumption. For this purpose, we selected video games as an example. Such games afford an excellent opportunity to study play behavior by virtue of their oft-noted tendency to prompt high levels of participative involvement (Bloch and Bruce 1984). Further, they lend themselves to clear manipulations of visual/verbal content and to straightforward measures of performance success. Video games therefore appeared to be an appropriate vehicle for testing our hypotheses concerning the enjoyment of games.

METHOD

Experimental Design

Subjects began by providing information concerning individual characteristics (age, sex, game ownership, SAT-Verbal and SAT-Quantitative scores) and by completing a 10-item index of visualizing/verbalizing tendency (described later). After these preliminaries, they were introduced to a video game and played it one time before rating it on initial positive/negative feelings (also described later).

A verbal or visual version of the video game was assigned randomly to each subject. In both versions, the game consisted of a rocket-landing simulation in which subjects attempted to land their spacecrafts on the moon's surface without crashing. Both versions were designed to be as similar as possible in objectives, playing time, and such game parameters as fuel-burn rate, force of gravity, and fuel availability. Subjects played the game on an Atari home computer using either a conventional keyboard (verbal version) or a joystick (visual version).

The verbal version provided the subject with printed information on remaining fuel, velocity, distance to go, burn rate, and time elapsed. Play involved deciding how strongly to fire the landing jets on a numerical scale from "no thrust" (0) to "very strong thrust" (9), entering this number on a typewriter keyboard, reading the updated information on descent status, and repeating these steps until the rocket either landed safely (success) or crashed (failure).

The visual version showed a moving image of a spacecraft on the screen and required subjects to watch its flight and to try to guide it safely onto one of several possible landing pads by manipulating a joystick that controlled horizontal and vertical rocket thrusts. A colored light (green/red) indicated whether the rate of descent would

result in a safe landing (success) or a crash (failure). Remaining fuel supply was represented by a bar that shrank in size as fuel was burned.

Subjects began with one practice trial and immediately rated their initial feelings toward the game (on a scale described later). They then played the game four times in succession, thereby generating four success/failure outcomes. After these four trials, they responded to a number of additional perceptual and emotional scales (also described later). Finally, subjects were asked to land successfully as many times as possible during an eight-minute period. This behavior provided a final measure of performance.

In all, the experimental sessions lasted about 45 minutes each. Subjects showed apparent involvement, often moving their bodies with abandon or crying out in excitement. Such behavior suggests a high level of naturally occurring intrinsic motivation for the video games used in this particular experiment.

Subjects

Sixty MBA students were tested in individual sessions with randomly drawn halves of each sex assigned to the visual and verbal games. We intend no implication that this sample is representative of the market for video games. Indeed, the sample's mean age of 25.6 years would suffice to make any such inference invalid. Instead, we would argue that video games simply provide a plausible and involving context in which to examine experiential phenomena that presumably pertain to a wide spectrum of intrinsically motivated consumption activities. Graduate students appear to be adequately playful for this purpose. Although any findings should ultimately be validated on a number of different samples, MBAs provide a reasonable starting point.

Measures

Performance. The experiment provided three measures of performance: Performance 1 (success/failure on the initial practice trial), Performance 2 (number of successes out of four follow-up attempts), and Performance 3 (number of successes during the final eight-minute trial period).

Personality (the V/V Index). Various scales representing tendencies toward visualization/verbalization have appeared in the literature (Hilgard 1981). Some assess the subject's *ability* to form or manipulate imagery, whereas others reflect the individual's *preference* for visual imagery as a cognitive style or processing strategy. The former ability measures have been plagued by persistent methodological problems (see Kaufmann 1979; Kunzendorf 1982; Richardson 1978). Among the latter preference measures, Richardson's (1977) Visualizer–Verbalizer Questionnaire (VVQ) has also suffered from problems in reliability and predictive validity (Childers et al. 1983). However, some of these difficulties with the VVQ appear to have been resolved by Kunzendorf's (1981, 1982) Prevalence of Visual Imagery Test (PVIT), which has successfully predicted performance in solving geometry problems and therefore appears potentially relevant to the case of video games.

Our measure of tendency toward visualization/verbalization (the V/V Index) reflects Kunzendorf's work by focusing on the comparative strengths of visual vs. verbal associations. However, Kunzendorf's strictly verbal scales seem less appropriate than some scale that combines verbal and nonverbal reference points. In this connection, Beard (1979) has proposed the use of pictorial anchors in scale items suitable for tapping nonverbal responses. We followed this suggestion by using one picture and one word as anchors for each scale.

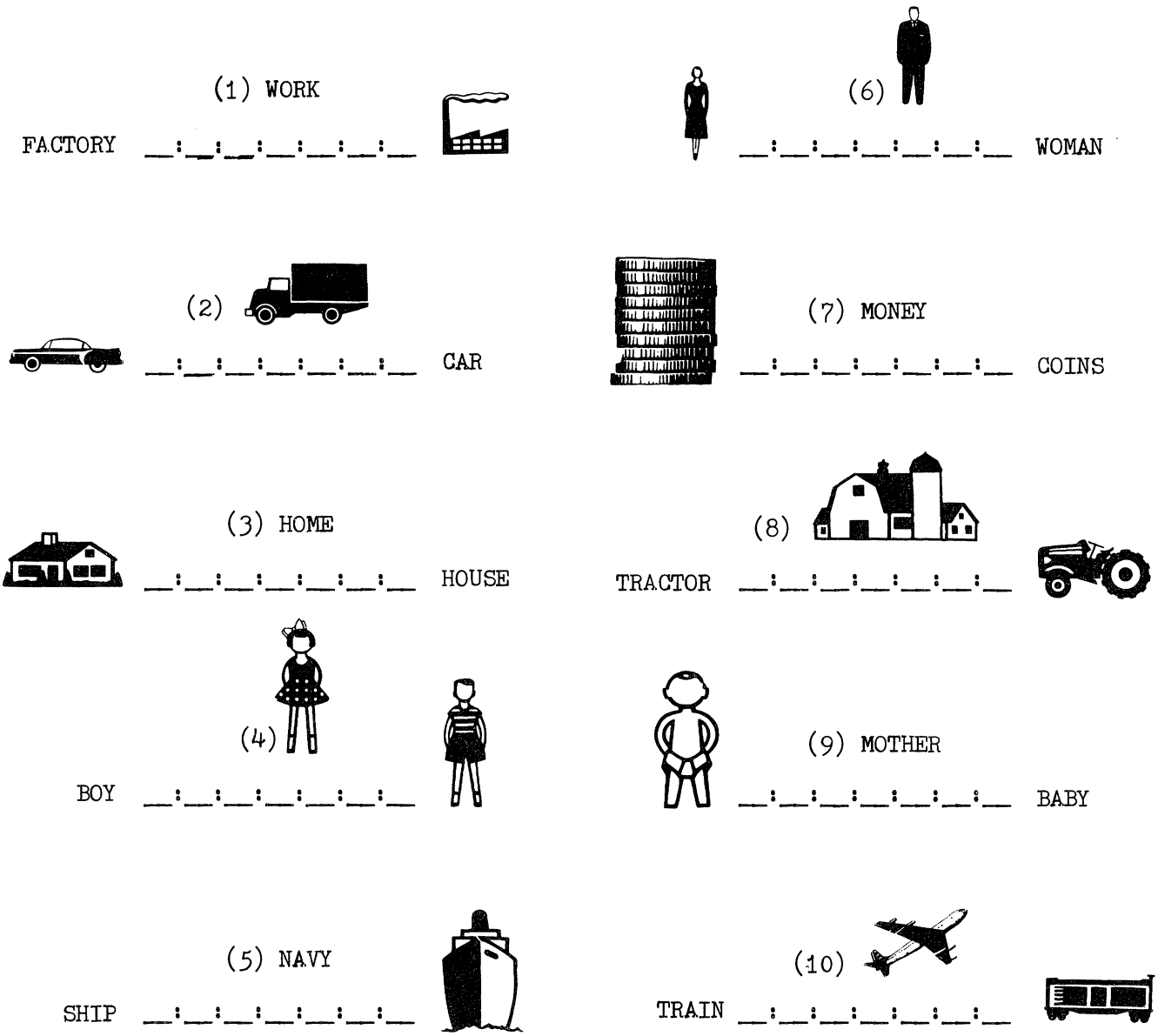
The resulting V/V Index employed the 10 items shown in Figure B. For each item, the subject was asked to consider the numbered stimulus (a word or picture) and then to place a check closer to the anchor (a word or picture) more strongly associated with that stimulus. Stimulus type and scale direction were balanced and randomized. Ratings for each subject were normalized by subtracting the mean (to remove scale-response biases), reversed in direction (where necessary) to make more visual responses uniformly more positive (items 2, 3, 6, 7, and 9), and then summed to create the overall V/V Index. Reliability for this index was viewed as satisfactory for a scale still under development (alpha = 0.69).

Emotions. Problems with respondent fatigue prohibited the repeated use of multi-item scales to measure emotions. Accordingly, the initial measure of Feeling (taken immediately after the first practice trial) employed a single seven-point scale borrowed from Byrne (1971) and anchored at "I feel very negatively/very positively toward this game." After the four-trial performance test, multi-item scales developed by Mehrabian and Russell (1974) were used to measure Pleasure (happy/unhappy, pleased/annoyed, satisfied/unsatisfied, contented/melancholic, hopeful/despairing, relaxed/bored), Arousal (stimulated/relaxed, excited/calm, frenzied/sluggish, jittery/dull, wide-awake/sleepy, aroused/unaroused), and Dominance (controlling/controlled, influential/influenced, in control/cared for, important/awed, dominant/submissive, autonomous/guided). These items were randomized in order, randomly reversed in direction, and presented to subjects in the standard seven-point bipolar format. To reduce scale-response biases, each subject's PAD scores were normalized by subtracting the mean, (re)reversed in direction where necessary, and summed to create indices of Pleasure (alpha = 0.89), Arousal (alpha = 0.89), and Dominance (alpha = 0.88). The high reliabilities obtained for these indices reflect the care invested by those concerned with refining the PAD framework.

Perceived Complexity. After the four-trial performance test, perceptions were rated on 14 bipolar adjectival scales. These scales were normalized for each individual, reversed in direction where necessary, submitted to principal com-

FIGURE B

SCALES USED IN THE VISUALIZATION/VERBALIZATION INDEX



ponents analysis, and reduced to a summative index of Complexity based on the seven items that loaded highest on the first component: varied/redundant, complex/simple, novel/familiar, contrasting/similar, surprising/usual, heterogeneous/homogeneous, and rare/common (alpha = 0.85).

Analysis

The model shown in Figure A may be adapted to represent the longitudinal data on performance, perceived complexity, and emotions collected in the present experimental study. Such a representation results in the following system of relationships:

$$P1 = f(G, VV, P\text{–}G, \cdots) \quad (1)$$

$$F = f(G, VV, P\text{–}G, P1, \cdots) \quad (2)$$

$$P2 = f(G, VV, P\text{–}G, F, P1, \cdots) \quad (3)$$

$$C = f(G, VV, P\text{–}G, P2, \cdots) \quad (4)$$

$$P = f(G, VV, P\text{–}G, C, P2, \cdots) \quad (5)$$

$$A = f(G, VV, P\text{–}G, C, P2, \cdots) \quad (6)$$

$$D = f(G, VV, P\text{–}G, C, P2, \cdots) \quad (7)$$

$$P3 = f(G, VV, P\text{–}G, P, A, D, C, P2, \cdots) \quad (8)$$

where:

G = Type of Game
VV = V/V Index of Personality
P–G = Personality–Game Congruity
P(i) = Performance (i)
F = Feeling
C = Complexity
P = Pleasure
A = Arousal
D = Dominance

and the ". . ." notation indicates covariates about which specific hypotheses have not been made.

In all cases except one, we assumed linear functional relationships. The one exception involved the appearance of C as an independent variable affecting P, A, and D in Equations 5 through 7. Here, in accord with previous findings (noted earlier), we investigated the possibilities of nonmonotonic effects. However, since tests revealed no significant nonlinearities, we eventually adopted the assumption of linearity for all variables used in the analysis, including C.

The resulting representation of the game-playing experience involves a fully recursive system of linear equations in which no feedback loops appear. Consistent with the model's assumed recursiveness, we used ordinary least squares (OLS) regressions to estimate its parameters (Blalock 1971; Duncan 1975). For recursive systems, such OLS estimates give coefficients that are identical to those obtained by maximum likelihood techniques for handling structural models (Land 1973; Theil 1971; Turner and Stevens 1959).

In these OLS regressions, individual characteristics—such as age, SAT-Verbal, or SAT-Quantitative scores (measured continuously) and sex or game ownership (represented by dummy variables)—were included if they reached statistical significance in two-tailed tests at the 0.10 level. There were two reasons for including such covariates even where their effects had not been hypothesized in advance. First, this part of the analysis offered some exploratory insights into the nature of the relationships involved and their connection with such factors as game-playing ability. Second, in spite of our randomization procedure, the visual/verbal game treatment was weakly though significantly associated with SAT-Verbal scores ($t(58) = 1.87$, $p < 0.10$) and with the V/V Index ($t(58) = -2.38$, $p < 0.05$). Thus it became important to control for these possibly confounding variables by including them as covariates when testing for the hypothesized effects of central concern.

One key set of hypothesized effects involved the interaction between G (Type of Game) and VV (the V/V Index of Personality). Here, G was coded as a dummy variable (0 = verbal, 1 = visual) and P–G (Personality–Game Congruity) was coded as a multiplicative interaction term (VV × G). All three terms (G, VV, and P–G) were included as independent variables in each regression. Accordingly, any differences in emotions or performance due to the main effect of the game treatment are controlled for, as are any direct effects of personality. Hence, a significantly positive coefficient for P–G may be interpreted as a tendency for the effect of visualizing (verbalizing) on the dependent variable of interest to become more positive for those playing the visual (verbal) game. Thus a significantly positive P–G coefficient represents a slope shift that supports the hypothesis of interest.

These and other prespecified directional hypotheses (Hypotheses 1 through 6) were tested using one-tailed *t*-tests on coefficients in the OLS regressions just described. In addition to these tests of our basic hypotheses, we also examined the following issues: (1) the possible main effects of G; (2) the direct effects of VV; and (3) the predictive contributions of covariates such as age, sex, SAT-V, SAT-Q, and game ownership. These nondirectional hypotheses and nonhypothesized effects—which we designated Issues 1, 2, and 3—were assessed using two-tailed *t*-tests.

Operational Hypotheses

The six directional hypotheses (H1 to H6) and three other relevant issues (I1 to I3) may now be summarized as follows (where each hypothesis assumes use of the appropriate control variables, as indicated by the set of relationships given earlier):

H1: F, P, A, and D are positively related to P–G (when controlling for G, VV, other relevant antecedent variables, and significant covariates).

H2: P1, P2, and P3 are positively related to P–G (again, when controlling for the appropriate variables).

H3: C depends negatively on P2 (with the appropriate controls).

H4: F is positively related to P1, while P, A, and D depend, respectively, on both P2 (+, +, +) and on C (+, +, −), still assuming use of the appropriate control variables.

H5: P2 is positively related to P1, while P3 is positively related to P2 (with the proper controls).

H6: P2 is positively related to F, while P3 is positively related to P, A, and D, but negatively related to C (with the proper controls).

I1: Type of Game could exert main effects on performance, perceived complexity, or emotions. However, the directions of such main effects were not specified in advance because there were no a priori reasons to predict that either the visual or the verbal game would be easier or better liked.

I2: The V/V Index of Personality could contribute directly to performance, perceived complexity, or emotions, again with no reasons to specify directional hypotheses.

I3: Individual characteristics (age, sex, SAT scores, and so on) might be related to differences in ability or motivation and might therefore contribute significantly to the predictions of performance, perceived complexity, or emotions. We did not advance a priori hypotheses concerning the nature of such effects. Unlike the predictors considered in Hypotheses 1 through 6 and Issues 1 and 2, these individual characteristics were entered on a purely post hoc basis in the manner of covariates intended to control for extraneous sources of variance.

RESULTS

The OLS regression results relevant to estimating Equations 1 through 8, testing Hypotheses 1 through 6, and examining Issues 1 through 3 appear in the Table. These results provide the necessary statistical details. The beta coefficients correspond to the parameter estimates that would be obtained by a conventional path analysis (Land 1969; Wright 1960). However, drawing the full set of paths would produce a bewildering tangle of arrows that would be unnecessarily complicated for the present purposes. Instead, we have attempted to facilitate interpretation by constructing the flow diagram found in Figure C.

In Figure C, each box contains the name of a dependent variable and an indication of which individual characteristics contributed positively or negatively to its prediction and were therefore used as covariates (S = Sex, with M = 1 and F = 0; Q = SAT-Q; V = SAT-V). Arrows feeding into each box indicate the occurrence of significant hypothesized (nonhypothesized) effects. These effects, examined by one-tailed (two-tailed) *t*-tests, are shown without (with) parentheses.

Findings

Examination of the Table reveals the following key findings (stated without repeated reference to the use of covariates and control variables):

H1: As expected, P–G Congruity exerted positive effects on Feeling ($p < 0.10$), Pleasure ($p < 0.05$), and Dominance ($p < 0.05$). However, the predicted effect on Arousal did not appear (n.s.).

TABLE

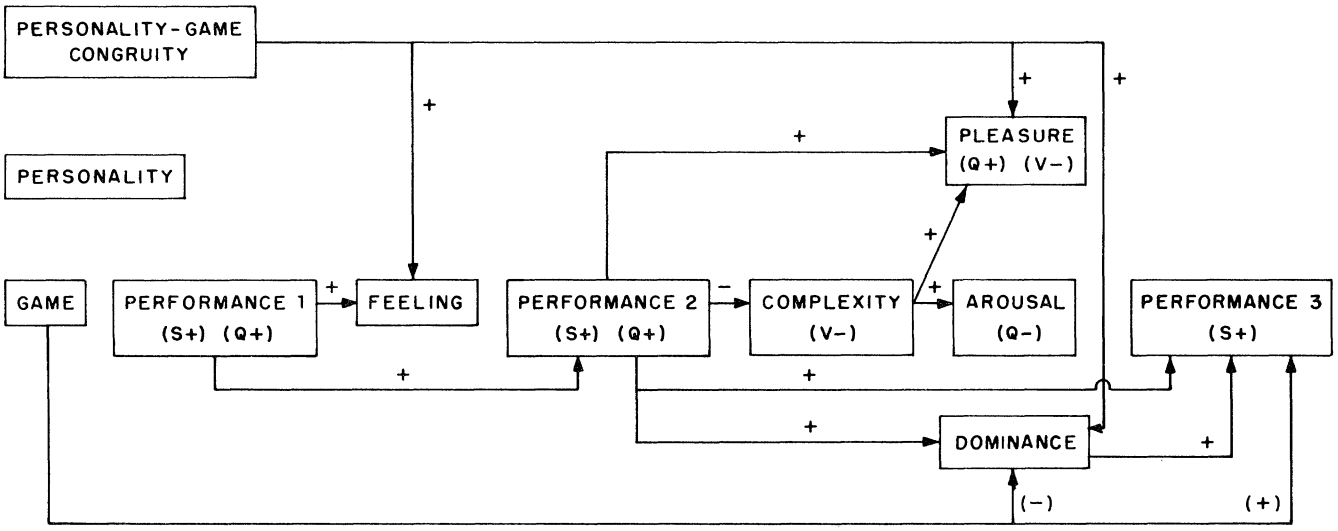
RESULTS FOR OLS REGRESSIONS

Dependent variable (Multiple *R*)	Independent variables	Beta	*t*-value	*p*-level
Performance 1 (P1)	Game (G)	−.27	−1.60	n.s.[b]
R = .43	Personality (VV)	−.05	−0.29	n.s.[b]
p < .05	P–G congruity (P–G)	.16	0.77	n.s.[a]
	Sex (S)	.26	2.11	.05[b]
	SAT-Q (Q)	.23	1.81	.10[b]
Feeling (F)	Game (G)	.12	0.71	n.s.[b]
R = .42	Personality (VV)	−.07	−0.40	n.s.[b]
p < .05	P–G congruity (P–G)	.30	1.45	.10[a]
	Performance 1 (P1)	.27	2.18	.05[a]
Performance 2 (P2)	Game (G)	.02	0.14	n.s.[b]
R = .73	Personality (VV)	.15	1.14	n.s.[b]
p < .0001	P–G congruity (P–G)	−.16	−0.99	n.s.[a]
	Feeling (F)	−.07	−0.67	n.s.[a]
	Performance 1 (P1)	.37	3.45	.001[a]
	Sex (S)	.41	4.09	.001[b]
	SAT-Q (Q)	.25	2.37	.05[b]
Complexity (C)	Game (G)	−.05	−0.30	n.s.[b]
R = .36	Personality (VV)	−.06	−0.35	n.s.[b]
n.s.	P–G congruity (P–G)	−.03	−0.11	n.s.[b]
	Performance 2 (P2)	−.28	−2.05	.05[a]
	SAT-V (V)	−.26	−1.95	.10[b]
Pleasure (P)	Game (G)	.04	0.28	n.s.[b]
R = .59	Personality (VV)	−.20	−1.22	n.s.[b]
p = .001	P–G congruity (P–G)	.36	1.84	.05[a]
	Complexity (C)	.33	2.75	.01[a]
	Performance 2 (P2)	.31	2.34	.05[a]
	SAT-Q (Q)	.25	1.94	.10[b]
	SAT-V (V)	−.23	−1.83	.10[b]
Arousal (A)	Game (G)	.10	0.75	n.s.[b]
R = .68	Personality (VV)	.08	0.55	n.s.[b]
p < .0001	P–G congruity (P–G)	.21	1.24	n.s.[a]
	Complexity (C)	.55	5.24	.0001[a]
	Performance 2 (P2)	.05	0.46	n.s.[a]
	SAT-Q (Q)	−.20	−1.79	.10[b]
Dominance (D)	Game (G)	−.31	−1.90	.10[b]
R = .46	Personality (VV)	−.02	−0.13	n.s.[b]
p < .05	P–G congruity (P–G)	.45	2.18	.05[a]
	Complexity (C)	.15	1.22	n.s.[a]
	Performance 2 (P2)	.34	2.59	.01[a]
Performance 3 (P3)	Game (G)	.37	2.50	.05[b]
R = .71	Personality (VV)	.03	0.23	n.s.[b]
p < .0001	P–G congruity (P–G)	−.16	−0.90	n.s.[a]
	Pleasure (P)	−.16	−1.03	n.s.[a]
	Arousal (A)	−.05	−0.36	n.s.[a]
	Dominance (D)	.32	2.14	.05[a]
	Complexity (C)	−.06	−0.44	n.s.[a]
	Performance 2 (P2)	.35	2.53	.01[a]
	Sex (S)	.34	2.81	.01[b]

[a] One-tailed.
[b] Two-tailed.

FIGURE C

FLOW DIAGRAM OF SIGNIFICANT HYPOTHESIZED EFFECTS



NOTE: Effects in the direction predicted (not predicted) were tested by one-tailed (two-tailed) *t*-tests. Arrows indicate significant positive (+) and negative (−) effects. Exogenous characteristics contributing significantly to the prediction of each endogenous variable appear under that variable: S = Sex (M = 1, F = 0), Q = SAT-Quantitative, V = SAT-Verbal. For more detailed results, see the Table.

H2: None of the three hypothesized effects of P–G Congruity on Performance 1, 2, or 3 appeared.

H3: The expected negative effect of Performance 2 on Complexity did occur as predicted ($p < 0.05$).

H4: As anticipated, Feeling depended positively on Performance 1 ($p < 0.05$). Similarly, Pleasure ($p < 0.05$) and Dominance ($p < 0.01$)—but not Arousal—depended positively on Performance 2, while Pleasure ($p < 0.01$) and Arousal ($p < 0.0001$)—but not Dominance—depended positively on Complexity.

H5: Performance 2 and Performance 3 showed the anticipated positive dependence on Performance 1 and Performance 2 ($p < 0.001$ and $p < 0.01$, respectively).

H6: Performance 2 did not depend significantly on Feeling. Performance 3 did not depend significantly on Pleasure, Arousal, or Complexity. However, Performance 3 did show the expected positive dependence on Dominance ($p < 0.05$).

I1: Type of Game exerted nonhypothesized main effects only on Dominance ($p < 0.10$) and Performance 3 ($p < 0.05$).

I2: No nonhypothesized direct effects of Personality appeared.

I3: Males scored significantly higher than females on Performance 1 ($p < 0.05$), Performance 2 ($p < 0.001$), and Performance 3 ($p < 0.01$). Similarly, those with higher SAT-Q scores performed better on Performance 1 ($p < 0.10$) and Performance 2 ($p < 0.05$) and experienced higher levels of Pleasure ($p < 0.10$) but lower levels of Arousal ($p < 0.10$). Finally, SAT-V contributed negatively to both Complexity ($p < 0.10$) and Pleasure ($p < 0.10$).

DISCUSSION

This study has examined some experiential phenomena involved in playful consumption by focusing on emotions, performance, and personality in the enjoyment of games. By investigating these facets of the consumption experience, we have added empirical content to the broad research agenda implied by Holbrook and Hirschman's (1982) inquiry into consumer fantasies, feelings, and fun. Clearly, we have emphasized the experiential side of such distinctions as consumption vs. purchase, consuming vs. buying, and using vs. choosing. We believe this emphasis to be important in the development of a well-rounded conceptualization of consumer behavior.

Implications

In general, the study provides support for the conceptual scheme underlying our model and hypotheses concerning the enjoyment of games. Briefly, our measures appear to possess good nomological validity, and the results generally cohere with our a priori expectations.

Hypotheses 2 and 6 received little support. These concerned (1) the effect of personality–game congruity on performance (nonsignificant in all three cases), and (2) the effects of perceived complexity and emotions on subsequent performance (nonsignificant in four of five cases). These disconfirmations are consistent with the interpretations that:

- Performance in video games depends primarily on ability and learning rather than on cognitive style or motivational antecedents, and
- Effects of emotion may fail to appear because of the transitory nature of pleasure, arousal, and dominance.

Apparently, because of its anchoring in ability and learning, game-playing performance remains insensitive to the effects of short-run emotional fluctuations.

With these exceptions, the other four hypotheses received consistent support. Eleven of the 13 effects hypothesized by Hypotheses 1, 3, 4, and 5 were statistically significant in the predicted directions.

In particular, it appears that emotions do depend on personality–game congruity (Hypothesis 1) as well as on perceived complexity and on prior performance (Hypothesis 4). These findings suggest an important role for the competence motive in that:

1. Emotions respond favorably to a match between preferred cognitive style (visualizing/verbalizing) and game format (visual/verbal), and
2. Positive affect (liking, pleasure, dominance) increases with mastery of the game.

These effects remain when controlling for such potentially confounded determinants as sex, age, and verbal or quantitative aptitude.

Moreover, performance shows a clear dependence on previous performance (Hypothesis 5), even when controlling for the aforementioned covariates. To the extent that the covariates capture differences in ability, this suggests the presence of learning phenomena comparable to those that characterize the acquisition of any other skill. What is important here is not the demonstration of such a learning effect, but the implications for the effects that mastering an intrinsically motivated game can have on the hedonic (i.e., pleasurable) components of the playful consumption experience. The evidence that people enjoy succeeding at a game, while hardly surprising, may point toward the importance of other hedonic aspects of consumer behavior. One suspects that many other consumption phenomena involve emotional consequences only dimly revealed by conventional approaches to consumer research.

Finally, some potentially interesting effects of sex and aptitude (SAT scores) also appeared. Apparently, men and those with high quantitative ability tend to succeed at video games more often, while such games bring more pleasure to those with quantitative skills but less pleasure to those with verbal abilities. Although these individual characteristics were intended primarily as covariates for purposes of controlling for extraneous sources of variance, their effects do serve to emphasize that age, skill, and other individual differences are likely to exert strong effects on consumers' responses to playful consumption experiences. Such effects should be further explored in future research on the enjoyment of play.

Limitations

We do not wish to overstate the contribution of the present illustrative study. Accordingly, we shall discuss some limitations by virtue of which the study falls short of a complete investigation of playful consumption.

First, the study explores only one aspect of the play experience—namely, the enjoyment of games. Since games entail important performance aspects associated with the competence motive, they may differ in some respects from other intrinsically motivated consumption behavior, even in cases where they do not involve any extrinsic prize beyond the satisfaction of succeeding against a personal or public performance standard. Indeed, it is possible that some subjects may have adopted a task-oriented viewpoint that could have removed their experience from the context of pure play behavior.

Second, one should not assume that video games necessarily typify the wide range of consumption experiences associated with other activities such as chess, tennis, bridge, and peekaboo. Clearly, an exploration of the phenomenology of the full range of game-related consumer behavior must await future research efforts.

Third, the video games themselves represented only one key contrast (visual vs. verbal) and thereby failed to account for other potentially important differences in design characteristics or skill requirements (e.g., fast- vs. slow-paced, noisy vs. quiet, attacking vs. avoiding, or strategic vs. stochastic).

Fourth, certain key variables relevant to game-playing satisfaction may have been omitted from the design of the present investigation. For example, our study took no account of the social framework within which many games are played. Indeed, the experimenter did everything possible to avoid influencing the subject's performance or emotional responses and steadfastly refrained from providing moral support or encouragement. Such social rewards, though "realistic" in the context of everyday gaming behavior, might have introduced extraneous, uncontrolled sources of variance not immediately relevant to the intrinsically motivated aspects of playful consumption. These extrinsic social factors merit investigation in future research on consumer games.

Fifth, while the subjects used in this study (graduate students) showed high involvement with the experimental situation, this sample represented only a subset of the relevant game-playing population. Support for all but two of our six hypotheses in the data on this sample gives us increased confidence in their generalizability to other groups of interest. However, we would reserve judgment on the nonhypothesized relationships of performance to

sex and quantitative aptitude until such exploratory findings have been supported by a number of diverse samples.

Sixth, our key response measures included only a few of the many aspects of consciousness, emotions, and value obviously involved in the experience of playful consumption. Moreover, these primarily verbal measures failed to account adequately for such important nonverbal components as visual imagery, psychobiological arousal, or physical movement.

Seventh, as noted earlier in discussing the analysis, our random assignment of subjects to treatment groups did happen to result in weak tendencies for those with higher verbal aptitudes to play the verbal game (accounting for 5.7 percent of the variance in SAT-Verbal) and for those with stronger visualizing tendencies to play the visual game (explaining 8.9 percent of the variance in the V/V Index). As previously mentioned, we controlled for these confounds statistically by treating SAT-Verbal and the V/V Index as covariates. However, if such a design had been feasible, we would have preferred to control for these variables experimentally (rather than statistically) so as to remove all possibility of confounding and multicollinearity. We therefore urge the reader to note that parts of our design are correlational rather than experimental in nature.

Finally, the assumed recursiveness of our model rests on the assumption that performance determines perceptual and emotional responses, which in turn determine subsequent performance, and so on. A full test of the model would have required measuring all perceptual and emotional variables both before and after each performance measure. As previously noted, problems with respondent fatigue prevented the repeated use of our multiitem indices for Pleasure, Arousal, Dominance, and Complexity, thereby leaving the validity of the recursiveness assumption partially in doubt. This problem resembles that of omitted variable(s) bias (in that prior levels of P, A, D, and C did not appear as independent variables in the analysis). It thereby also serves to remind us that other key performance-related variables (such as spatial ability, physical coordination, small muscle control, or past experience with personal computers) may have been left out. We could not and did not include all such potential sources of variance. They must remain as interesting subjects for future research—ideally, within the context of models that incorporate ability, expertise, and skill as integral components of play processes.

CONCLUSION

Such limitations warn against any pretension of having achieved a complete description of playful consumption. Nevertheless, this study illustrates various approaches that should prove useful in further exploration of intrinsically motivated consumer behavior. We acknowledge the challenge that the current state-of-the-art in consumer research is still inadequate to the task of comprehensively portraying this or any other consumption experience. Much exploratory work remains to be done in the development of measures and techniques needed for the better understanding of experiential consumption. We hope to have made a meaningful contribution in that direction by exploring some key aspects of playful consumer behavior, as illustrated by the roles of emotions, performance, and personality in the enjoyment of games.

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