The Psychology of Reading for Pleasure: Needs and Gratifications

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SPONTANEOUS pleasure reading (*ludic* reading) deserves attention for at least two reasons: It is an important goal of reading instruction, and it offers rewards that are powerful enough both to sustain reading for long periods and to support a large publishing industry. Because the needs it satisfies and the gratifications it offers have received little attention, the author undertook a series of five studies over a 6-year period in order to investigate the antecedents of ludic reading and its consequences. The five studies consider (1) reading ability and reading habits, (2) reader speed variability during natural reading, (3) reader rankings of books for preference, merit, and difficulty, (4) the physiology of ludic reading, and (5) the sovereignty of the reading experience. Among the findings were that there is substantial rate variability during natural reading, with most-liked pages being read significantly slower; that the Fog Index of readability predicts readers' preference and difficulty rankings, but that a cloze measure does neither; that, in keeping with the Protestant ethic, readers perceive literary merit to be inversely related to reading pleasure; that reading is physiologically more aroused than other waking activities, and is succeeded by marked physiological deactivation; that readers greatly prize the control they exercise over their reading; and that many reading rewards are mediated by consciousness-change mechanisms that may have an analog in hypnotic trance.

La psychologie de lire par plaisir: Besoins et satisfaction

LE FAIT de lire spontanément pour le plaisir *(lecture ludique)* mérite notre attention pour au moins deux raisons: C'est un objectif important de l'apprentissage de la lecture et cela récompense suffisamment pour stimuler la lecture pendant de longues périodes et pour soutenir la grande industrie de la publication. Puisque on n'a accordé qu'une faible attention aux besoins qu'elle satisfait et aux gratifications qu'elle procure, l'auteur a entrepris une série de cinq recherches sur une période de 6 ans afin de découvrir les antécédents de la lecture ludique de même que ses conséquences. Les cinq recherches examinent (1) l'aptitude à la lecture et les habitudes de lecture, (2) la variation de vitesse de lecture pendant la lecture normale, (3) la classification des livres par les lecteurs selon la préférence, la valeur et la difficulté, (4) la physiologie de la lecture ludique, et (5) la suprématie de l'expérience de la lecture. Parmi les observations, on retrouve une variation substantielle de la vitesse pendant la lecture normale avec les pages les plus appréciées lues beaucoup plus lentement; tout en respectant l'éthique protestante, les lecteurs accordent aux livres une valeur inversement proportionnelle au plaisir de lire; on observe que la lecture est physiologiquement plus stimulante que d'autres activités d'éveil et qu'il s'ensuit une désactivation physiologique marquée; les lecteurs accordent une grande importance au contrôle qu'ils exercent sur leur lecture; plusieurs satisfactions que procure la lecture sont médiatisées par des méchanismes de changement de conscience pouvant présenter une analogie avec l'état de transe hypnotique.

La psicología de la lectura por gusto: Necesidad y gratificación

LA LECTURA espontánea por gusto *(lectura lúdica)* merece atención por lo menos por dos razones: Es una meta importante de la instrucción de la lectura, y ofrece recompensas lo suficientemente grandes para sostener la lectura por períodos prolongados y también mantener a una gran industria editorial. Debido a la poca atención que ha recibido tanto en las necesidades que satisface y las gratificaciones que ofrece, el autor llevó a cabo una serie de cinco estudios por espacio de 6 años para investigar los antecedentes de la lectura lúdica y sus consecuencias. Los cinco estudios consideran (1) habilidad de lectura y hábitos de lectura, (2) variabilidad de la velocidad de lectura durante la lectura natural, (3) la clasificación de libros por lectores en términos de preferencia, mérito, y dificultad, (4) la fisiología de la lectura lúdica, y (5) la soberanía de la experiencia de la lectura. Entre los hallazgos se encontró que hay un rango substancial de variación durante la lectura natural, donde las páginas más gustadas son leídas significativamente más despacio; que conforme a la teoría de la ética protestante, el mérito se percibe en relación inversa con el gusto por leer; que la lectura es fisiológicamente más incitante que otras actividades de vigilia, y es seguida por una deactivación fisiológica marcada; que los lectores valoran en gran medida el control que ejercen en su lectura; y que muchas recompensas en la lectura están mediadas por mecanismos de cambios de conciencia un tanto análogos al trance hipnótico.

Die Psychologie des Lesens zum Vergnügen: Bedürfnisse und Genuß

SPONTANES LESEN zum Vergnügen *(ludic reading)* verdient Aufmerksamkeit aus mindestens zwei Gründen: Es ist ein wichtiges Ziel für den Lese-unterricht und es bietet Belohnungen, welche wirksam genug sind, Lesen über lange Zeiträume zu unterstützen und außerdem eine riesige Verlagsindustrie zu erhalten. Da die befriedigten Bedürfnisse und die Belohnungen so wenig Aufmerksamkeit erregt haben, hat der Autor eine Serie von fünf Studien, über einen 6-Jahre-Zeitraum verteilt, unternommen, um die Antezedens des Lesens aus Spaß und dessen Konsequenzen zu untersuchen. Die fünf Studien befassen sich mit (1) Lesefähigkeit und Lesegewohnheiten, (2) Leseschnelligkeits-Schwankungen während des normalen Lesens, (3) Leser-Buchbeurteilung bezüglich Vorliebe, Verdienst, und Schwierigkeit, (4) der Psychologie des Lesens zum Spaß und (5) der Unumschränktheit des Leseerlebnisses. Unter anderem fand man heraus, daß ein wesentlicher Schnelligkeitsunterschied besteht während des normalen Lesens, nämlich indem besonders beliebte Seiten viel langsamer gelesen werden; daß in Einklang mit protestantischer Moral, Leser literarisches Verdienst invers mit Lesevergnügen als verbunden ansehen; daß Lesen physiologisch mehr erregt ist als andere Wach-Aktivitäten und daß danach eine deutliche physiologische De-Aktivierung erfolgt; daß Leser ihre Kontrolle über den Lesevorgang sehr schätzen; und daß viele Lese-Belohnungen einen Bewußtseinsveränderungs-Mechanismus vermitteln, der einer hypnotischen Trance ähnlich ist.

Pleasure reading is a form of play. It is free activity standing outside ordinary life; it absorbs the player completely, is unproductive, and takes place within circumscribed limits of place and time (Caillois, 1961; Huizinga, 1938/ 1950). Ludic reading (from the Latin *ludo*, I play: Stephenson, 1964) is therefore a useful descriptor of pleasure reading, reminding one that it is at root a play activity, and usually paratelic, that is, pursued for its own sake (Apter, 1979). In this study, ludic readers are defined as those who read at least a book a week for pleasure and relaxation; of course, many ludic readers — and certainly the 33 recruited for this study — read a great deal more than that.

Any kind of reading matter can serve as the

vehicle for ludic reading: a torn scrap of news-print, a magazine, a novel, or a textbook on a subject the reader finds engrossing. However, it is light fiction that is the focus of the five studies reported here. The reading of light fiction, most usually in book form, is of special interest for at least three reasons: First, fiction reading accounts for most ludic reading (Nell, 1985). Second, the experience of being lost in a book, in absorption or entrancement, is most strongly associated with the reading of fiction and of "narrative nonfiction" (Wolfe, 1975). Third, since the eighteenth century the reading of fiction, unlike other kinds of reading, has been the target of merciless critical asceticism and has even been regarded as addictive: The circulating libraries were "tuppenny dram shops," and "to read novels, as to drink wine, in the morning, was far into the [nineteenth] century a sign of vice" (Leavis, 1938/1965, pp. 8, 50; see also Nell, 1985).

Motivational analysis of ludic reading

One of the goals toward which reading instruction strives is spontaneous ludic reading. A legitimate goal of reading research, therefore, is to specify the motivational structure of this complex activity — the needs it promises to satisfy and the rewards it mediates. This is a daunting task. The reader's reinforcements are to be found not in the words and phrases of the book, but in the cognitive events that result from the interaction between book and reader. This interaction, in turn, is modulated by the social value system and by personality variables. In the face of these complexities and inconstancies, if one is to attempt a comprehensive specification of the needs leading to and the gratifications arising from ludic reading, one must consider a large number of related domains. These include the domains of aesthetic value formation, narrative structure and the nature of storytelling, the component skills of reading and the determination of reading ability, the nature of comprehension and its relation to readability measures, the attentional mechanisms that change the quality and content of consciousness in dreaming, in trance, and in some kinds of reading, and physiological arousal as a reward system during reading.

Figure 1

Flow chart of the antecedents and consequences of ludic reading
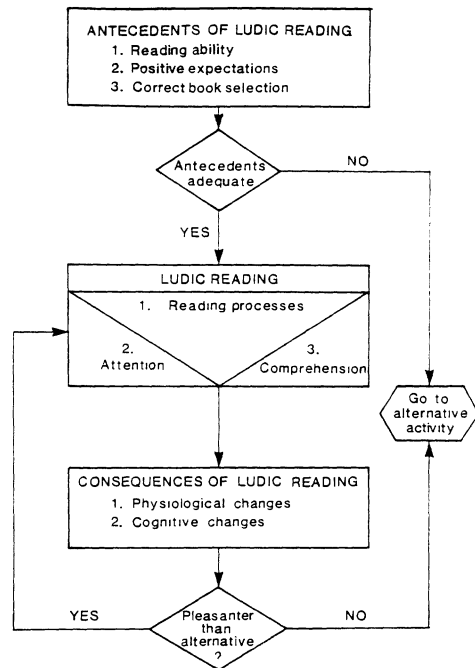
The three-part scheme in Figure 1 offers a useful frame for this inquiry. The first of these parts emphasizes the antecedents of ludic reading — namely, adequate reading ability, the expectation that ludic reading will be a pleasurable experience, and the selection of a ludic vehicle that provides rewards sufficient to sustain the reading process. The second part pertains to the reading process itself, including its attentional and comprehension components. The third part comprises the consequences of ludic reading, especially its physiological and cognitive outcomes. Though not aspiring to the status of a model (except in the sense of a careful analogy that displays the relations of the parts to the whole: English & English, 1958), the flow chart in Figure 1 indicates the temporal and hierarchic relations between these skills and events. One may further hypothesize that, for each ludic reader, there are reinforcement comparators that weigh the pleasures of commencing or continuing reading against those of

available alternative activities. The positive reinforcers that lead to the inception and continuation of reading are the subject of the remainder of this paper. Negative reinforcers, which may lead to a "stop reading" decision, can arise, for example, if the cognitive product generated by the book is uncomfortably close to a raw personal area, as a love story would be for a reader who has just terminated a relationship ("Books like that upset me terribly"); if the reader lacks the narrative frames employed by the author ("I just couldn't get into the book"); if a *So what?* judgment is passed ("It's such a stupid story"); and for a multitude of other reasons. That the balance between reading and alternative activities is delicate may be inferred from the observation that the decision to terminate reading in favor of an alternative activity may be taken at a natural breakpoint (a paragraph or chapter end), at a page-turning, or, indeed, in the middle of a sentence.

The interrelations of these skills, habits, and consequences were examined in five studies that involved 245 subjects (and 50 more in informal pretesting) over a 6-year period. Very broadly, these follow the sequence of Figure 1, though later parts of the scheme inevitably intrude into the earlier. The five studies investigate (1) reading ability and reading habits, (2) reading speed variability during natural reading, (3) readers' rankings of books for preference, merit, and difficulty, and how these rankings relate to readability scores, (4) the physiology of ludic reading, and (5) the sovereignty of the reading experience, which deals with the cognitive changes brought about by ludic reading. The first three studies relate primarily to the processes and antecedents of ludic reading; the last two deal with its consequences, in which are contained the reinforcers that sustain ludic reading.

STUDY 1
Reading Ability and Reading Habits

Though it seems perfectly self-evident that ludic readers are skilled readers (whether as a precondition for ludic reading, or as a consequence of it), there is very little empirical evidence that relates reading ability to reading habits, or that determines the degree of reading skill required for ludic reading.

Indirect evidence that ludic readers are good readers, defined by Carroll (1981) as "those who have attained high levels of automaticity in a large proportion of [the] components of reading skill" (p. 18), derives from time budget data, which indicate that leisure reading of books increases sharply with increasing education, and furthermore, that as book reading increases, newspaper reading time declines as a proportion of total leisure reading time (Skorzynski, in Szalai, 1972). Similarly, Cole and Gold (1979) report that book readers are better educated than newspaper and magazine readers, who do not read books. One interpretation (there are others) of this latter finding is that better educated readers are faster readers; thus, one may speculate that the smaller reading "parcels" provided by newspapers and magazines could be the refuge of slower and less fluent readers, to whom reading an entire book may appear a daunting task.

Direct evidence is anecdotal, like the reports in the literature that slow readers do not read for pleasure (Fisher, 1961; Hilgard, 1979), and observational, like the speed with which ludic readers of one's acquaintance appear to "devour" books (Study 2). More compelling observational evidence comes from the experience of learning a second language and settling down at some point to read what looks to be an exciting book in this newly acquired tongue: One then becomes forcefully aware of the difference between the technical literacy that allows one to decipher a menu or a newspaper headline and the effortless fluency that opens the way to pleasure reading.

Direct **empirical** evidence relating pleasure reading to reading ability is sparse. Greaney and Quinn (1978) found that 920 Irish fifth-graders spent an average of 60 minutes a week in leisure reading (which included books, comics, and newspapers), and that the strongest predictors of leisure reading were gender and

reading attainment; however, these variables accounted for only 23 percent of the variance in book reading time, indicating that their study failed to tap other predictors. In a study of 2,731 Canadian seventh-graders, Landy (1977) showed that of 100 variables, the most important predictors of amount of reading were sex, reading ability, and the number of books the child owned. Related findings are reported by Howden (1967) and Lamme (1976). These various kinds of evidence converge to indicate that ludic reading and skilled reading are likely to co-occur. The current study was designed to investigate further the interrelations between reading ability and the reading of books, newspapers, and magazines for pleasure.

Method

Subjects

Two groups of subjects contributed data to Study 1: 129 students (of whom 27 formed a follow-up group 2 years after the initial study) and 33 ludic readers.

Students. The students were markedly similar in age ($M = 20.6$ years, $SD = 2.7$) and education; all but a few were in their first or second year of college education. Of the total sample, 71 were Bachelor's degree students at the University of Port Elizabeth, all studying first-year English. The remaining 58 were diploma students in the Department of Civil Engineering and Building at the Port Elizabeth College for Advanced Technical Education. There were 47 females and 74 males in the sample; the home language was English for 87 subjects, and Afrikaans for 34 (8 subjects were omitted from the gender/language subgroups because of incomplete information). Though ostensibly members of the same culture, Afrikaans- and English-speaking South Africans have repeatedly been shown to differ widely in their value systems and attitudes (e.g., Mynhardt, 1980; O. Nell, 1968). With regard to career choice, there are substantial differences between the demands of careers in teaching or research, followed by most Bachelor of Arts graduates, and the demands of careers in construction site supervision or architectural draftsmanship, for which building science graduates are prepared. My rationale for selecting such widely divergent groups was that the considerable differences in interest and aptitude profiles that might be assumed to underlie these tough- and tender-minded career orientations were expressions of differing developmental antecedents, which might in turn be expected to give rise to differing reading ability levels and different reading habits, as indeed they did.

A follow-up group of 27 of the 71 BA degree students in the 1976 sample was re-evaluated in 1978, 2 years after initial testing. Of these, 24 were then completing the third-year English literature course, 1 had completed two years of English literature studies, and 2 had completed one year.

Ludic readers. Ludic readers were defined as those who read a minimum of one book a week for pleasure. Most subjects exceeded the minimum by a wide margin: The sample mean was 16.9 books a month ($SD = 10.0$). Of the 33 ludic readers, 17 were selected from among the 49 who responded to a newspaper advertisement that read, in part, "Bookworms required. If you read a lot of light fiction and enjoy it very much, please volunteer to advance the cause of science." The other 16 subjects were recruited by me. Mean age of the sample was 37.2 ($SD = 9.7$); 14 were male and 19 female. No parameters were set for home language, educational level, or reading preferences on the grounds that individuals who read a great deal for pleasure must find reading in English a rewarding experience: Such reading presupposes adequate reading skills in English and a high level of positive reinforcement from reading. Many subjects were very heavy readers. The owner of a book exchange said she read 2 books a day and more on weekends, giving a total of some 16 a week, or 70 a month. Four members of a single family who all volunteered as subjects, and are more fully described in Study 5, claimed that, between them, they read 101 books a month.

Materials and procedure

The Reading Comprehension Speed Test. Like other complex activities, reading can be described in terms of its component processes, each of which is independently specifiable, or as a final, integrated performance to which one summating measure may be applied. One such summating measure appears to be **reading comprehension speed (RCS),** which is derived by correcting raw reading speed downward by a factor derived from a comprehension test on the material read (Jackson & McClelland, 1979). A number of commercially available tests were pretested on 14 subjects with a wide range of reading abilities and were found to be unsatisfactory. A new test was accordingly devised, based on a 1,000-word passage from *The Caine Mutiny* (Wouk, 1951, pp. 19-23). The Reading Comprehension Speed Test appeared to discriminate well between the 14 pilot-test subjects, and its readability as measured by the Fog Index (Gunning, 1952) was 10.21 (Kwolek, 1973, gives a mean Fog Index of 9.68 for bestsellers, and 11 as acceptable to most adults).

Subjects were instructed to "read at the fastest rate at which you can understand comfortably what you are reading.... After you have read the passage you will be required to answer some easy questions about the content of what you have read." True ludic reading (such as that described in Study 2) is, of course, response-free, and adequate comprehension is assured by the ludic reader's own need to extract meaning in order to enjoy reading. However, if a brief passage is presented to subjects as a measure of reading speed, this internal control tends to fall away. If reading speed rather than skimming speed is to be measured, an external comprehension control is required.

After a 90-second warmup period, subjects were asked to adjust their speed up or down as they felt appropriate ("You may feel the material is very straightforward and you can read faster, or that you have been going too fast to understand what you are reading"), and they were timed over a further 2 minutes from wherever they had stopped after the warmup. Because some control for comprehension had been es-

tablished, raw reading speed was allowed to play a major role in the RCS formula used for scoring: First, the comprehension questions were easy, and only 3 multiple-choice distractors were used, possibly inflating the scores of guessers. Second, a 100% score was given for answering correctly all of those questions that applied to the portion of the passage each subject had read (but no other questions), so that slower readers were not penalized. Third, only half the percentage error on the comprehension speed test was subtracted from raw reading speed to give the RCS. For example, the RCS of a subject who answered 6 of 8 applicable questions correctly, and read 1,000 words in the 2-minute period, would have been $(1000/2) - (25/2) = 487.5$. Because of the correction for comprehension, the RCS is a quotient, not a reading speed in words per minute.

The Reading Habits Questionnaire. The questionnaire began by defining pleasure reading as "the kind we do for fun and relaxation." Respondents were then asked to say how long they read at different times (after lunch, in bed before going to sleep, etc.) and to indicate at which of these times they most enjoyed their reading. **Reading quantity** was probed by asking how many books subjects read a month, and also the monthly, weekly, or daily number of magazines and newspapers "read," whether fleetingly or thoroughly. The questionnaire elicited **time spent reading** magazines and newspapers as well as books.

Subjects were then asked to imagine that "your favorite reading time has arrived, but you're staying at a strange hotel. Suddenly, you discover you have nothing to read." Two questions followed: "How would you feel?" and "What would you do about it?" Indications of strong affect ("absolutely terrible" or "completely lost") were scored as 4; moderate affect ("frustrated," "annoyed," "disappointed and at a loss") as 3; weak affect ("disappointed"), 2; and "don't care" answers, 1. On the second question, 3 points were given for a determined search ("scour the shops till I found a book"), down to 1 point for "do nothing." A **Frustration**

Index was computed by summing these feeling and action scores. This index can be seen as an indirect measure of motive strength to engage in ludic reading at the inception of reading.

Similarly, **reading span** can be seen as an indirect measure of motive strength during reading. This was measured by asking subjects to say how long they would continue reading a book they very much enjoyed if they were able to continue reading without interruption for as long as they liked.

An estimate of **book choice decision time** was derived from answers to the following question:

> You're in the public library looking for some light reading. You pick up a book, look it over, and decide whether to take it out or put it back on the shelf. How long on average does it take you to decide?

An analogous measure, derived from the Reading Preference Test (to be described in Study 3), is **sorting time.** This is the time taken for the first part only of the Reading Preference Test. This requires subjects to scan 30 brief anonymous extracts from a wide variety of books, and allocate each to one of four categories ("most like," "quite like," "quite dislike," "most dislike"). Instructions emphasized that although this procedure was being timed, it was not a speed test, and subjects should "work at a comfortable pace." Sorting reading matter into broad "like/dislike" categories is an analog of everyday book selection: At a library or bookshop, the ludic reader picks a book or passes it over by rapidly scanning one or two randomly selected pages. Ludic readers could therefore be expected to have the skills needed to perform this part of the Reading Preference Test more rapidly than non-ludic readers. Because of its relation to reading habits, sorting time will be reported here, rather than in Study 3.

The last item in the Reading Habits Questionnaire asked subjects to "think back to some books you enjoyed very much. What kind of enjoyment do you get out of books like that?" Answers to this question by the 33 ludic readers yielded the self-report data reviewed in Study 5.

Hypotheses

It was hypothesized, first, that reading ability, as measured by reading comprehension speed, would be positively correlated with quantity and time spent reading books, but not magazines or newspapers, and that the ability-related measures (sorting time and book choice decision time) would conform to this pattern. Second, it was predicted that reading time and quantity for books would be inversely related to time and quantity of reading for magazines and newspapers. Third, the motive strength measures (Frustration Index and reading span) were expected to correlate positively with book reading (which is held to be "addictive"), but not with newspaper or magazine reading.

Results and Discussion

Skills, motives, and habits

The 14 variables derived from the Reading Comprehension Speed Test and the Reading Habits Questionnaire relate to **reading ability,** to **reading habits,** and to **motive strength**, and they are presented under these heads in Table 1.

Reading speed. Validity and reliability of the Reading Comprehension Speed Test were good. For the 33 ludic readers, who read a mean of 16.9 (SD = 10.0) books a month for pleasure, the mean RCS of 387 (SD = 121) on this test correlated well with each reader's speed reading ludic fiction in the laboratory (shown in Study 2 to be equivalent to reading under natural conditions); $r(27) = .65, p < .001$. With regard to reliability, the RCS of 27 university students of English literature did not change significantly over a 2-year period, $t(52) = 1.6$, n.s. Of course, the evidence in Study 2 on reading speed variability during natural reading suggests that reading speed measures will do a poor job of predicting how fast a reader will read a given paragraph or page during natural pleasure reading. But, conversely, the longer the passage on which the measurement is made (or the longer the reading time allowed), the smaller the effect of within-text flexibility.

Table 1 Reading ability and reading habits: Intercorrelation matrix (Pearson's r) for 129 students

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
READING ABILITY AND RELATED SKILLS														
1. Reading speed in WPM	1.00	.98***	−.23*	−.11	.25**	a	.04	.02	.29**	.30**	.05	.11	.29	.18
2. Reading comprehension speed		1.00	−.25*	−.10	.28**	.34***	.07	.01	.32***	.33***	.08	.11	.31**	.21
3. Sorting time			1.00	.06	−.21*	−.19*	−.10	−.14	−.19*	−.18	−.08	−.10	−.20*	−.01
4. Book choice decision time				1.00	.08	a	.00	.03	.01	−.06	−.08	−.15	.04	−.19*
READING HABITS														
Reading Time														
5. Total reading time					1.00	.81***	.76***	.37***	.57***	.52***	.43***	.14	.29**	.29**
6. Book reading time						1.00	.26**	.30**	.57***	.58***	.17	.09	.34**	.30**
7. Magazine reading time							1.00	.12	.35***	.27**	.56***	.06	.09	.18
8. Newspaper reading time								1.00	.10	.04	.00	.41***	.10	.06
Reading Quantity														
9. Total reading quantity									1.00	.96***	.45***	.37***	.20*	.24*
10. Number of books read										1.00	.25**	.19*	.21*	.27**
11. Number of magazines read											1.00	.28**	−.01	.02
12. Number of newspapers read												1.00	.09	−.06
MOTIVE STRENGTH														
13. Frustration index													1.00	.12
14. Reading span														1.00

aMissing data

*$p < .05$ **$p < .01$ ***$p < .001$

For the 129 students, mean RCS was 221 (*SD* = 73); their raw reading speed was 238 words per minute (WPM). This figure is in good agreement with college student reading rates reported elsewhere (Harris, 1968; Jackson & McClelland, 1979). Many ludic readers will, however, read considerably faster than 238 WPM, as shown by the RCS of 387 obtained by the 33 ludic readers in the present study, and their mean natural reading speed of 412 WPM (Study 2).

Reading speed and ludic reading. Table 1 presents the intercorrelations of the 14 variables. Reading Comprehension Speed correlates with more variables and at rather higher levels of significance than raw reading speed, indicating that even the small correction for comprehension accuracy enhanced this measure's relational fertility. RCS correlated significantly with time spent reading books (*r* = .34, *p* < .001) and number of books read (*r* = .33, *p* < .001).

The near-zero correlations between RCS and the measures of reading of magazines and newspapers do not support the view that these are preferred by slower readers; on the contrary, newspaper and magazine reading appear to be unrelated to reading ability.

Book choice decision time, with one exception, generated no significant correlations with the other variables. On the other hand, its operationalized analog, sorting time, related significantly to the reading speed measures, to book reading time and quantity, and to the Frustration Index.

The Frustration Index is strongly correlated with book reading time, but quite unrelated to magazine and newspaper reading time. This may be interpreted to mean that newspaper and magazine readers are less dependent on their reading matter than book readers, who feel reading deprivation more keenly and take more vigorous action to end it. Perhaps the eighteenth-century critics were correct when they compared novel reading to tippling: Novels are addictive, whereas newspapers are not! The fact that both the Frustration Index and reading span are most strongly related to book reading

time (Table 1) suggests that these variables may be indirectly tapping the strength of the motives to engage in and to continue ludic reading, which is most often book reading.

Conclusions. In any society in which reading is a common and early-acquired skill, it is not possible to carry out a study in which reading ability is manipulated as the independent variable, while age, intelligence, and education are held constant. Accordingly, no causal inferences can be drawn about the strong positive correlations between reading speed, book reading time and quantity, and book reading motivation. Higher reading comprehension speeds may be a precondition for ludic reading, or they may develop as a consequence of it. For reading instruction, it is clearly important to determine whether there is an RCS above which ludic reading usually develops, and below which it does not, and to throw more light on the direction of the relations between reading comprehension speed and ludic reading.

Between-group differences

Table 2 gives means and standard deviations for the principal subject subgroups, and for all subjects combined. There are several major findings. First, irrespective of career or language differences, females spend more time reading books than males; these differences carry over to other reading habit variables; and college males, of both language groups, read fewer books and for less time than the rest of the sample. The fastest readers are the English university females (RCS = 254), and the slowest are the college Afrikaans males (175). The former read ludic books for longer every day (165 minutes) than the whole group (125 min), and the latter for very much less time (53 min), thus further supporting the strong relations already noted between book reading and reading ability.

Second, the Frustration Index is higher for those groups that spend more time reading books, and lower for those who spend less time on books. Again, it is striking that heavy book-readers seem to be more dependent on their reading than those who read books less.

Table 2   Reading ability and reading habits in relation to gender, language, and career choice for all subjects and for each subgroup

	All Subjects		University								Technical College					
			Females				Males				Females		Males			
			English		Afrikaans		English		Afrikaans		English		English		Afrikaans	
Variable[a]	($N = 129$)		($n = 34$)		($n = 10$)		($n = 14$)		($n = 5$)		($n = 3$)		($n = 36$)		($n = 19$)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
READING ABILITY AND RELATED SKILLS																
1. Reading speed in WPM[b]	238	71	–	–	–	–	–	–	–	–	–	–	–	–	–	–
2. Reading comprehension speed	221	73	254	99	227	41	222	25	167	28	228	69	222	65	175	48
3. First sort time (in sec)	1223	373	1153	386	1118	167	1136	268	1096	287	1138	415	1287	387	1394	404
4. Book choice decision time (in min)[b]	6.5	8.3	–	–	–	–	–	–	–	–	–	–	–	–	–	–
READING HABITS																
Reading Time (in min)																
5. Total reading time	260	177	281	161	432	223	230	105	365	171	699	241	199	132	167	99
6. Book reading time	125	107	165	123	213	118	151	82	158	97	310	75	74	57	53	59
7. Magazine reading time	95	102	78	70	183	155	31	27	134	59	346	258	86	92	86	68
8. Newspaper reading time	39	26	38	27	35	23	47	28	73	43	42	15	38	19	27	15
Reading Quantity																
9. Total reading quantity	10.5	7.8	12.3	9.1	18.2	10.1	10.1	2.4	9.4	4.0	19.3	10.0	8.0	4.4	8.8	4.6
10. Number of books read	5.7	6.3	7.4	8.3	12.8	9.4	5.7	2.5	3.8	2.2	11.0	8.5	3.6	3.6	4.1	4.0
11. Number of magazines read	1.9	1.2	2.0	1.2	2.9	1.3	1.1	0.8	2.4	1.1	4.3	1.1	1.6	1.1	1.9	1.1
12. Number of newspapers read	2.8	1.0	2.8	1.0	2.5	1.0	3.2	1.0	3.2	1.4	4.0	1.0	2.8	1.0	2.8	1.0
MOTIVE STRENGTH																
13. Frustration index	3.9	1.5	4.5	1.5	5.0	1.6	4.8	1.4	4.4	1.3	5.0	1.0	3.3	1.3	3.0	0.8
14. Reading span (in min)	133	67	141	67	138	74	106	43	180	70	140	34.6	142	72	115	69

[a]Variables numbered as in Table 1.   [b]Data unavailable for subgroups.

Third, there is no support in these figures for the substitutive hypothesis—that is, that book reading is reciprocally related to newspaper and magazine reading. On the contrary, book reading time decreases as either newspaper or magazine reading time decreases.

STUDY 2
Reading Speed Variability During Natural Reading

Readers often describe their reading as if it were eating. Holland remarks that "of all the different levels of fantasy in literature, the oral is the most common" (1968/1975, p. 38). Books are said to taste good ("I rolled a phrase on my tongue and it tasted better than the wine": Maugham, 1934/1970, p. 337) or bad ("In some ways it's a horrible little book, like over-brewed tea": T.E. Lawrence in Cohen & Cohen, 1971). As books taste, so are they eaten. The involved reader savors the text, moving slowly to get its full richness (Hilgard, 1979); "hungrier" readers may bolt their reading like a dog its food, tasting little but enjoying the quickly attained sensation of fullness: "To read without reflection is like eating without digestion" (Edmund Burke, in Peter, 1982).

If skilled readers do indeed move freely between bolting text and savoring it, substantial within-text flexibility would arise during natural ludic reading. Unlike entertainment media such as TV or radio programs, in which presentation pace is controlled by the producer rather than the user, the pace of leisure reading is under sole control of the reader. Readers may well exercise this control to linger over the hero's arrival at police headquarters, or to race through a beautiful sunset after the murder. Readers' subjective reports indicate that they greatly prize their control of reading pace. One of the subjects in this study wrote,

> I can read a book at my own pace, I can put it down whenever I like, and I can always go back to it. A movie can't be switched off—same with TV—but perhaps the most important of all, I can't replay the enjoyable parts, or see it at my own pace.

Much reading rate variability research, such as Carver's (1983) work in support of his rauding theory, relates to movement between texts of varying difficulty. For ludic reading, within-text flexibility is of greater interest, and this is most conveniently measured as a **flexibility ratio,** arrived at by dividing the reading speed (in WPM) for the fastest-read passage by that for the slowest-read passage. Eanet and Meeks (1979) found that the mean flexibility for three proficient readers reading a science passage was 55%, which converts to a ratio of 1.55. Just and Carpenter (1980) found that gaze durations for content words in a single sentence varied from 267 to 1,566 msec, a ratio of 5.86, and Rayner (1978) reports a ratio of 5.13.

However, none of this evidence is directly applicable to an investigation of ludic reading, which requires the study of skilled readers reading long, continuous, and readily comprehended texts of their own choice under response-free conditions. It is important to determine whether such readers do indeed "bolt" and "savor," thus generating substantial within-text flexibility, or whether they read at the invariant pace that Huey described after observing the reading of a continuous text:

> The readers showed a strong rhythmic tendency. Each would fall into a reading pace that seemed most natural to him, and would then read page after page in almost exactly the same time. Quite usually the differences from page to page would not be over three or four seconds (1908/ 1968, p. 175).

Method

Subjects
Subjects were the 33 ludic readers described in Study 1.

Materials
Ludic reading vehicle. A letter mailed to subjects asked each to come to the first laboratory session with three books of the kind he or

she usually read that promised to be especially enjoyable. To ensure that this criterion was met, I asked subjects to sample the first 50 pages of each book until they had found three books "that you regard as offering the best reads you have had for some time." During intake, subjects assigned an expected enjoyment rating to each book. The highest-rated was set aside for the second, criterion, laboratory session; the lowest-rated was returned to the subject; and the remaining book was used in the first session.

Reading Mood Questionnaires. The first of these, incorporating the Reading Habits Questionnaire described in Study 1, was administered before the first laboratory session; another followed the second laboratory session. In both, readers assigned **enjoyment ratings** to various kinds of reading experience, anchored to a "best book" question:

> Think of the most enjoyable reading experience you've had during the past year or two. Take your time, and when you feel ready, tell me the title of the book. Don't answer till you feel sure you have identified the book that gave you your most enjoyable reading experience.

Subjects were then asked to recount an episode they remembered especially vividly, to which an enjoyment rating of 100% was assigned. The scale was elaborated by asking subjects to rate well-remembered passages in a very recently read book, a book read under distracting circumstances, and the three books brought to the first laboratory session. In this way, generalizations about reading enjoyment were avoided, and reading pleasure was tied back to a subjectively unambiguous scale, anchored to remembered episodes in specified books.

Procedure

The page-by-page reading speed of the 33 ludic readers was monitored for 30 minutes during the second laboratory session. Reading in the laboratory began a few lines before the point at which the trial reading of the subject's most preferred book had stopped, usually at about page 50. In this study no attempt was made to control for comprehension, because this would have created an attentional set incompatible with ludic reading. Indeed, pleasure reading without comprehension is scarcely conceivable, so that each reader's enjoyment can be seen as evidence for adequate comprehension.

Each subject participated in two identical laboratory sessions a day apart, the first for habituation and the second for data recording.

Timing. In the laboratory, subjects lay with their backs to an observation window, through which page numbers could be noted, and beside a mirror which showed the unmistakable upward saccade that brought the subject's gaze from the bottom of a left-hand page to the top of a right-hand page. Completion of a right-hand page was of course indicated by the turning of a page. Timing was based on readings taken from the digital counter of an Ampex 2200 16-channel tape recorder, and was subject to a noncumulative maximum error of 6.2 sec per page. The worst effect this inaccuracy could have had is if all the fastest pages were read 6.2 sec slower, and all the slowest 6.2 sec faster. The effect of such a worst-case situation on the data in Table 3 would be to leave 11 of the 30 readers with a flexibility ratio larger than 2, still substantially better than the .05 chance level.

Results and Discussion

Natural reading and reading in the laboratory

In the laboratory, subjects had 11 electrodes affixed to their persons (see Figure 4 in Study 4), somewhat constraining movement, and there was considerable intrusive novelty in the situation, such as TV cameras and white noise. Under these circumstances, it seems unlikely that readers would regard even the second of the two laboratory reading periods as equivalent to natural reading. However, in the Reading Mood Questionnaires each subject was asked to make a series of direct comparisons between his or her usual ludic reading experiences and reading in the laboratory, and results showed no significant difference between the most enjoyable

Table 3 Reading comprehension speed (RCS), mean laboratory reading speed (in WPM), and flexibility ratio for 30 ludic readers

Subject[a]	RCS	Mean Lab Speed	Pages Read in Lab	WPM		Ratio (High/ Low)
				High	Low	
202	281	345	19	420	229	1.83
203	521	543	39	735	396	1.85
204	340	289	22	430	215	2.00
205	314	267	23	394	201	1.96
206	–	456	30	868	261	3.32
107	378	375	24	463	304	1.52
208	348	344	25	697	246	2.83
209	493	420	28	714	293	2.43
111	–	492	32	922	189	4.87
112	582	598	47	1071	363	2.95
113	283	397	28	593	312	1.90
214	314	356	22	486	181	2.68
215	331	329	22	424	238	1.78
116	388	312	28	485	198	2.44
118	695	794	58	1824	234	7.79
119	399	350	19	442	294	1.50
220	472	921	62	2214	457	4.84
221	261	316	25	489	269	1.81
222	364	365	26	606	243	2.49
223	247	386	27	655	202	3.24
124	536	427	28	1033	283	5.08
226	310	380	20	536	306	1.75
127	412	550	48	835	361	2.31
228	–	294	19	461	210	2.19
129	290	174	9	211	129	1.63
230	244	384	16	656	283	2.31
132	537	376	32	589	232	2.53
133	203	366	20	516	258	2.00
234	311	439	25	470	320	1.46
236	201	216	17	196	115	1.70
M	387	409	28	–	–	2.63

[a]The first digit indicates gender (1 for males and 2 for females), and the next two digits the sequence in which subjects were run in the laboratory, which is the order in which they are presented here.

recent reading experience and reading in the laboratory, $t(64) = 0.89$, n.s., or between the extent of reading involvement in the laboratory and outside it, $t(64) = 1.19$, n.s. Moreover, awareness of distractions was judged as significantly less during reading in the laboratory than during reading under distracting circumstances outside the laboratory, $t(64) = 2.83$, $p < .01$. These findings, though at first sight surprising, are compatible with ludic readers' everyday ex-

perience of being able to lose themselves in a book, even under compromising conditions.

Within-text flexibility

Table 3 gives the RCS on the pre-laboratory test (Study 1) and the mean laboratory reading speed in words per minute during the 30 minutes of laboratory reading for each of the 30 subjects for whom complete data were available, and the number of pages each read. Reading speeds for the fastest- and slowest-read pages are then given, followed by the flexibility ratio. It should be noted that reading speeds were computed by counting the actual number of words on each page read by the subject, so that speeds were not inflated by partial pages. The mean flexibility ratio for the 30 subjects is 2.63, with a range of 1.46 to 7.79, indicative of a great deal of flexibility during natural reading. Figures 2 and 3 plot page-by-page reading speeds for two readers. Figure 2 vividly illustrates the degree of within-text flexibility that may occur in natural reading, and Figure 3 shows that high speed (598 WPM) may be paired with moderate flexibility (2.95). Nonetheless, Table 3 also shows that lower flexibility ratios tend to be associated with lower reading speeds: The 5 readers with a mean speed below 300 WPM have a mean flexibility ratio of 1.89, well below the sample mean of 2.63. Moreover, reading speed and flexibility ratio are strongly correlated, $r(28) = .69, p < .001$.

Savoring

Do readers "savor" passages they most enjoy by reading them more slowly? In the post-laboratory Reading Mood Questionnaire, each reader was asked to identify the most-liked passage in the book read in the laboratory. For the 29 subjects for whom complete data were available, mean reading speed on the 113 pages they specified as most liked was 394 WPM ($SD = 140$), and on the 534 other pages it was 479 WPM ($SD = 245$). The difference is significant, $t(56) = 3.55, p < .01$. With the available data, it is not possible to determine whether the slowing on most-liked passages arose because of a reduction in reading rate, or because these passages were reread once or more.

Figure 2
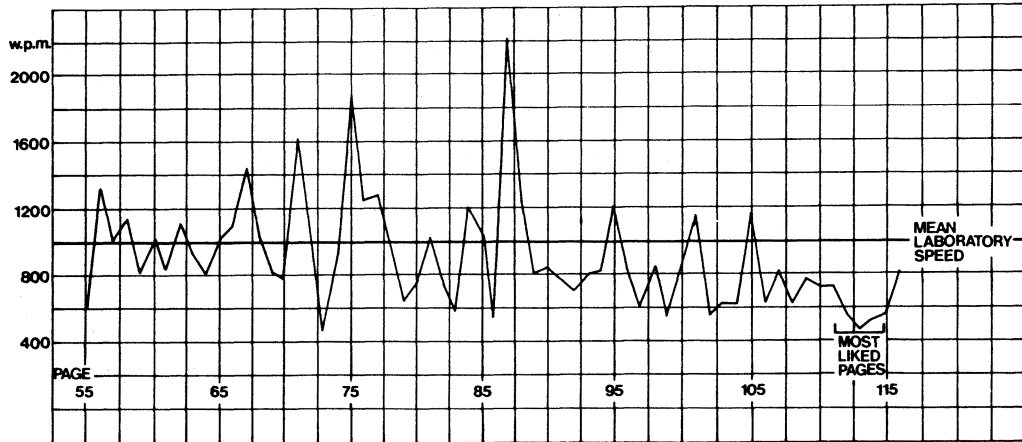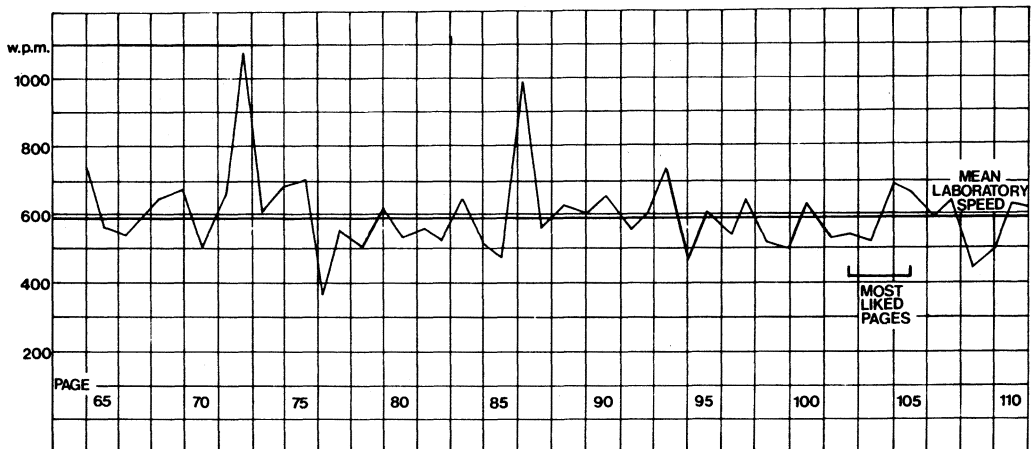Subject 220: High speed, high variability

Figure 3
Subject 112: High speed, low variability

It is striking that the standard deviation on the mean reading rate for most-liked pages is almost half that for other pages. It is possible that a good deal of the ludic reader's within-passage flexibility arises from moving into skimming or near-skimming for less-enjoyed passages. If, as seems likely, this were to cease when savoring, the lower variability of reading speed in most-liked passages would be explained.

Rauding and skimming

The upper limit at which reading with full comprehension of each thought (*rauding*) stops and some kind of partial reading begins is variously estimated at between 600 (Carver, 1972) and 800 WPM (Harris, 1968). If the lower of these figures is used, 11 of our readers (35%) moved from rauding to skimming in the course of their pleasure reading. Because the primary vehicle for ludic reading is *formulaic fiction* (Cawelti, 1976) — that is, long, continuous texts of moderate difficulty (Kwolek, 1973) and high predictability — "bolting" the text is feasible, because experienced readers have little difficulty capturing the gist of the material by skimming it. For example, Subject 206 wrote that she loves reading Silhouette romances "because they're so thin and go so fast. When it's boring you just turn over and go on because in any case you know how it will turn out."

Conclusions

The data indicate that within-text flexibility, however achieved, is a predictable accompaniment of pleasure reading, and bring into question the view that natural reading proceeds at a constant pace. On the contrary, it seems that a mark of the ludic reader is within-text reading rate variability.

STUDY 3
Readers' Rankings of Books for Preference, Merit, and Difficulty

Although ludic readers see themselves as reading what they like, the book selection proc-

ess is not a free interaction between the skilled reader and the universe of reading matter (Berelson, 1958; Chandler, 1973; Holbrook, 1972). Readers are consumers of popular culture (Lewis, 1978) and select their reading matter within the constraints of a value system that, in most Western societies, does not look kindly on the reading of fiction for pleasure. The sixteenth-century Protestant reformation imposed a revolutionary restructuring on the Western conscience with regard to the proper use of time, the importance of work, and the sinfulness of pleasure. Squandering time and money on profane works of fiction for pleasure reading is therefore an offense against every aspect of the Protestant ethic (Weber, 1904/1965), and it is to these roots that we must trace the moralizing tone in which reading by "the masses" has been condemned from the late eighteenth century to the present. Taylor (1943) has assembled a book-length collection of such condemnations ("indulgence of sloth & hatred of vacancy," "beggarly day-dreaming"); remarkably, some modern criticisms of reading for pleasure echo many of these sentiments (Mott, 1960; Pearce, 1974) and even amplify them (the emotions "become loose and deliquescent... and the unaroused brain degenerates": Davis, 1973, p. 17). I have explored elsewhere the impact of these judgments on public library policy and the emergence of new critical trends that are undermining the elitist absolutes (Nell, 1985). In the United States, though the ascendancy of cultural relativism ("indiscriminateness is a moral imperative": Bloom, 1987, p. 30) may temporarily have obscured the tension between elite and popular culture, this tension is part of the fabric of American criticism (Bloom, 1987; Fish, 1980) and remains a core issue in cultural value judgments and in public library policy (Nell, in press; Schroeder, 1981).

The pervasively negative judgments of their favored leisure activity affect the ways ludic readers see their own reading habit. When the 33 ludic readers in this study were asked what percentage of their pleasure reading would be rated as "trash" by a suitably austere representative of elite culture, such as their high school English teacher, their mean rating was

42.6% (SD = 26); 12 subjects rated 75% or more of their pleasure reading as trash. It is a strange reflection on our culture that pleasure reading, so zealously inculcated by school reading programs, may later be judged by the products of this education as aesthetically worthless, in society's eyes if not their own. In a variety of idiosyncratic ways (Nell, 1985), readers resolve the dissonance (Festinger, 1957) between the cognitions that, although one believes oneself to have good taste, the reading matter one most enjoys is trash.

Despite these condemnations, readers seem to know quite clearly what they want to read: The bestseller phenomenon and the universal appetite for narrative (Nell, in press) combine to suggest that a *ludic continuum* might exist that is relatively invariant across taste and even national cultures. In other words, it is possible that if the same 100 books were translated from their original languages into Japanese, French, and Hebrew, and ranked on a ludic continuum by the citizens of Tokyo, Paris, and Tel Aviv, these ratings would show a statistically significant correlation with one another.

Hypotheses

The series of studies reported in this section aimed to determine whether a ludic continuum could be demonstrated across two taste cultures (Gans, 1974), and to determine whether the Protestant ethic conviction that pain and virtue are constant companions (and that, therefore, the best medicine tastes the worst: Nell, 1985) would lead ludic readers to arrange works of fiction in a literary merit sequence that is the inverse of their own ludic reading preference sequence. For the same reason, it was hypothesized that merit and difficulty rankings would be closely related. Also, because both the Fog Index and cloze measures of readability claim to determine "ease of reading" (Chall, 1958, p. 6) and thus seem likely to predict reader interest (Beyard-Tyler & Sullivan, 1980; Owens, Bower, & Black, 1979), it was hypothesized that readability score rankings on both measures would be significantly correlated with readers' preference and merit rankings.

Method

Subjects

Three subject groups took part in these studies.

Students. These are the 129 students described in Study 1.

Librarians. There were two rather different groups of librarians. Twenty-three held posts as **professional librarians** in areas such as book selection, cataloging, and reference librarianship. Of these, 18 were BBib (Bachelor of Library Science) graduates, three held a graduate degree in Librarianship, and only two, though graduates (BA and BA Honors), had no professional qualification in librarianship. Among these professionals, the 5 most senior were the book selectors, whose job it was to place book purchase orders, relying partly on their own judgment and partly on reports from readers employed by the library service. The second group comprised 21 **branch library assistants;** although 10 were BA graduates in a variety of fields, none held any librarianship qualification, and 11 others had only a high school education. Among these latter were 5 assistants with an average of 7 years' experience. It will be useful to contrast this small group of 5 "**privates,**" in the front line of library users' questions and complaints, with the 5 book selector "**generals,**" enjoying comfortable back-line status.

Behind these educational and professional differences, however, there was considerable homogeneity among the librarians: All 44 were female, and all but 2 were Afrikaans-speaking and had been educated in the Calvinist fundamentalist tradition of the schools and universities of the Transvaal Province of South Africa.

Literary critics. Because of their training and experience, the 14 **university English lecturers** may be designated as professional critics, trained to distinguish between "literature" and "trash," and also to make finer qualitative distinctions within the domain of literature— perhaps by means of techniques such as those advocated by the New Critics (Richards, 1929/

1956) or the New Readers (Fish, 1980). Of the 14, 11 were members of the faculty of the University of South Africa (UNISA); 6 were female and 5 male, and 2 held PhD degrees. The 3 others, 2 with PhDs, were middle-aged males on the faculty of the small University of Port Elizabeth (UPE).

Materials

Though no manageable sample of written materials can claim to represent the universe of reading matter, 30 books were selected to reflect the main dimensions and categories of English-language reading matter. The **Reading Preference Test** comprised short extracts from these 30 books. Because of time constraints, each extract was limited to 20 typewritten lines.

Categories. The selection categories were fiction/nonfiction, genre (in the sense of a certain kind of subject matter that defines a style of literature), and historical period. In terms of market share, **nonfiction** should have comprised 84% of the sample (Simora, 1980), or 25 items. But **fiction** is the primary vehicle for ludic reading, and only 7 nonfiction items were included, of which 4 were textbooks (Codes 53, 83, 17, 23), and 3 (63, 77, 43) were narrative nonfiction (Wolfe, 1975). The fiction **genres** represented were crime-and-violence (encompassing such subgenres as espionage, sex-and-sadism, gun-for-hire, etc.), Western, romance, humor, and detective. Variations in **period,** with their changes in diction, were represented by including 5 works that spanned the nineteenth century (14, 76, 20, 46, 11).

Dimensions. The principal dimensions of variance were literary merit, difficulty, and *trance potential,* defined as readers' perception of the power of a book to carry them off to other worlds. For each of the three dimensions, the poles at either extreme were well represented, and a conscientious effort was made to provide moderate variability across the midrange 20 items, to emulate the variability range from which library users customarily make their selections.

Presentation. A two-digit random number was allocated to each extract, and extracts were presented to subjects in a random numbers sequence, and anonymously. Here, anonymity was necessary not—as in Richard's famous exercise in practical criticism (1929)—to show that trained minds could unerringly detect the quality of literariness, but to determine whether both trained and untrained minds shared the same ludic reading tastes. The extracts were accordingly typed, and the words *he* or *she* substituted for giveaways like James Bond or Mrs. Marple. Three specimen extracts—the most preferred, least preferred, and one ranked midway between these extremes—together with a list of the sources from which the extracts were drawn are reproduced in Appendixes A and B. The complete set of 30 extracts is available from the author.

Procedure

Representativeness of extracts. No single brief extract can be fully representative of a complete book, and it was necessary to determine whether, despite their anonymity and brevity, the extracts remained valid as representatives of the books from which they were drawn. Accordingly, 39 of the librarians were also asked to rank 21 actual books (2 fiction titles were unavailable in multiple copies) in sequence of likely frequency of issue. The question of how well a single extract can represent an entire book was further probed by including two extracts from the same book, Hailey's *Money Changers.* Item 55 describes the detection of fraud, and Item 84 is a detailed description of an act of torture. Though markedly dissimilar, both extracts are by the same hand, and both relate to central themes in the novel.

Preference rankings. The 30-item Reading Preference Test was presented to the **students** and **critics** with the following instruction:

> Imagine you have just come home after a long and difficult day. You have an hour or so free before supper. There's nothing you would rather do than curl up with a good book, have a good read—and forget your troubles.

From the pack, choose the book you would most like to relax with — and the book you would least like to relax with. Then arrange the other pages in the order of your preference.

To make the task easier, a method adapted from the Q-sort (Stephenson, 1967) was used: As noted in Study 1, subjects were asked first to sort the extracts into four categories, and then to rank the extracts in each category. This two-stage ranking procedure was used for all the ranking tasks described below.

For the **librarians,** the task was framed in terms of frequency of issue ("the most likely borrower demand for each of these books"). Because of their place in the social value system, librarians' judgments of borrower behavior were regarded as more interesting than their personal preferences. It must be noted that this is not a projective test, because taste at variance with one's own can readily be attributed to the borrowing public ("I can't stand Westerns, but the kids take out nothing else").

Merit rankings. This task was given after the preference rankings had been completed and the five nonfiction items (63, 53, 83, 17, 23) had been removed from the pack. Instructions to the **students** were as follows:

> The literary quality of the 25 extracts in front of you varies considerably. Some are of the highest literary quality, and others are absolute trash. Your task is to sort these 25 extracts into a merit sequence, with those of the highest merit on top and the trashiest trash at the bottom of the pile you make.

For the **librarians,** the task was again framed in terms of professional rather than personal judgments:

> Popular fiction is not necessarily good fiction — and most librarians feel that it is part of their job to lead adult readers away from trash and towards the enjoyment of good books. Now suppose you were given the opportunity of shelving the books in the fiction section of your library in a graded sequence, leading readers from the trashiest books ("rubbish") . . . to progressively more worthwhile fiction until they were ready . . . to enjoy good literature.

Difficulty rankings. This task was presented to the 21 **branch library assistants** as follows:

> The 30 extracts you have in front of you vary considerably in difficulty. Some are very easy to read, and others are very hard. Please sort these extracts into a difficulty order, so that the easiest are on top and the most difficult at the bottom.

Readability scores. Readability scores were computed by a formula measure and by a cloze procedure for each of the 30 extracts. The formula used in the present study is the **Fog Index** (Gunning, 1952). The Fog Index is based on sentence and word length (in order to identify the kind of writing that "fogs understanding": Gunning, 1964, p. 2-2), and it correlates well with other formula measures. Fog Index scores were calculated as the mean of scores on the two contiguous 100-word passages in each extract. For the **cloze procedure** (Taylor, 1953), the 13 subjects were aged between 25 and 45; all had completed 12 years of schooling, and 9 of the 13 had university degrees or diplomas. Seven were male, and 6 female. Six of these subjects also completed preference rankings; 3 were men and 3 women, and 5 of the 6 were university graduates. Cloze materials were prepared by leaving intact the first five lines of each of the 30 extracts, and deleting the fifth word of the first new sentence commencing on or after the sixth line, and each fifth word thereafter, until a total of 20 words had been deleted.

Results and Discussion

Books and extracts

Table 4 shows that for the librarians who sorted both books and extracts into likely issue frequency sequence, the extracts were indeed valid representatives of the books from which they were drawn, in that the popularity predictions made by sampling the brief 20-line extracts were significantly correlated with those made in the presence of the copious extrinsic cues provided by the book's cover design, title,

Table 4   Rank order correlation coefficients (Spearman's *rho*) for librarians' mean ranking of extracts and of books in order of frequency of issue

Extract Ranking		Book Ranking		Items[a]	rho	p[b]
Subjects	*n*	Subjects	*n*			
All librarians	44	Professional librarians	10	19	.52	.05
All librarians	44	Branch library assistants	21	21	.74	.001
Senior book selectors ("Generals")		With themselves	5	19	.65	.01
Experienced branch assistants ("Privates")		With themselves	5	21	.53	.05

[a]Number of items compared.   [b]Two-tailed *p*.

Table 5   Concordance coefficients (Kendall's *W*) for mean preference and merit rankings of various groups

Subjects	*n*	Items[a]	*W*	χ^{2*}
PREFERENCE RANKINGS				
Students				
All students	129	30	.29	1067.7
University Female English	34	30	.39	389.4
University Female Afrikaans	10	30	.42	124.1
University Male English	14	30	.30	122.4
University Male Afrikaans	5	30	.50	86.2
Technical College Female English	3	30	.65	56.5**
Technical College Male English	36	30	.39	407.8
Technical College Male Afrikaans	19	30	.33	184.0
University students in 1976	27	30	.35	277.5
University students in 1978	27	30	.36	284.8
Librarians				
Ranking of extracts	44	30	.52	670.2
Ranking of extracts	21	30	.54	334.0
Ranking of books	21	21	.73	295.5
Ranking of books	10	18	.89	151.2
Literary critics				
UNISA English lecturers	11	30	.58	187.91
MERIT RANKINGS				
UNISA English lecturers	10	25	.52	126.16
English students	27	25	.63	411.04
Professional librarians	23	25	.40	221.96
Branch library assistants	21	22	.34	150.95

[a]Number of items ranked.
*All χ^2 values significant at $p < .001$, except   **$p < .01$.

author, and publisher. (On the role of the cover in establishing a book's tone and market, see Petersen, 1975.)

Within- and across-group ranking patterns

Table 5 gives Kendall's coefficient of concordance (W) for merit and preference rankings by the three subjects groups and the subgroups. Though some absolute values of W are low, indicating considerable intragroup ranking variability, all except one are significant at the .001 level of probability, indicating that group members' rankings are in striking agreement.

Though the limited cultural diversity of the subject samples precluded testing of the broad, cross-cultural form of the ludic continuum hypothesis, the marked differences in language and values between the student subgroups, and between these and the librarians, do allow examination of ludic agreement across taste cultures. Table 6 shows that there is wide agreement about what constitutes a good read across language, gender, and career choice differences. This is especially striking in the higher correlations between the predominantly English-speaking students from Port Elizabeth

Table 6   Rank order correlation matrix (Spearman's *rho*) for mean preference rankings of various groups

Subjects	*n*	University				Technical College		
		Female		Male		Female	Male	
		Eng	Afr	Eng	Afr	Eng	Eng	Afr
All students	129	.50**	.37**	.86***	.83***	.81***	.88**	.92***
University students								
Female								
English	34		.81***	.50**	.23	.56**	.18	.27
Afrikaans	10			.45*	.18	.49**	.08	.19
Male								
English	14				.76***	.60***	.74***	.75***
Afrikaans	5					.54**	.87***	.84***
Tech. college students								
Female								
English	3						.61***	.78***
Male								
English	36							.92***
Afrikaans	19							

Subjects	*n*	All students
All librarians	44	.89***
Senior book selectors ("Generals")	5	.77***
Experienced branch assistants ("Privates")	5	.74***

*$p < .05$.   **$p < .01$.   ***$p < .001$.

Table 7a   Stepwise clusters in the mean preference rankings of 30 extracts by 129 students

Rank order	Rank		Cluster no.	Step to next	Range within cluster	Book code	Author	Genre
	M	*SD*						
					STUDENTS			
1	8.81	6.9	1	1.1	–	98	Wilbur Smith	War and love
2	9.97	6.7	2	1.5	4.5	29	Ayn Rand	Human drama
3	10.43	6.4				44	Graham Greene	Human drama
4	10.88	7.2				51	Peter O'Donnel	Crime and violence
5	10.95	6.8				86	Ian Fleming	Crime and violence
6	11.77	8.1				85	Arthur Hailey (torture extract)	Crime and violence
7	12.22	9.1				13	Gavin Lyall	Crime and violence
8	12.34	7.2				30	Agatha Christie	Detective
9	12.82	7.7				52	Somerset Maugham	Human drama
10	12.98	6.6				55	Arthur Hailey (fraud extract)	Crime and violence
11	13.22	7.2				71	James Michener	Human drama
12	13.34	7.5				62	Essie Summers	Romance
13	13.37	7.8				43	Hunter Thompson	Narrative nonfiction
14	13.93	8.2				38	Louis L'Amour	Western
15	14.08	7.1				76	Joseph Conrad	Human nature
16	14.11	8.6				16	Denise Robins	Romance
17	14.40	6.6				36	Richard Gordon	Humor
18	14.44	8.9				22	James Joyce	Human nature
19	15.95	6.4	3	2.6	0.7	66	Djuna Barnes	Human nature
20	16.16	6.8				46	Henry James	Human nature
21	16.22	8.8				11	Herman Melville	Human nature
22	16.33	8.9				14	Jane Austen	Human nature
23	16.53	7.7				49	Saul Bellow	Human nature
24	16.66	7.2				20	Charles Dickens	Human drama
25	19.27	7.2	4	5.1	0.6	77	David Ogilvie	Narrative nonfiction
26	19.87	7.8				63	Loren Fessler	Narrative nonfiction
27	24.90	6.3	5	–	1.4	83	Gray's *Anatomy*	Textbook: concrete
28	25.05	5.6				17	Franklin Moore	Textbook: concrete
29	25.16	5.6				53	Harrison Gough	Textbook: abstract
30	26.31	5.1				23	Nathan Rotenstreich	Textbook: abstract

and the Pretoria librarians, who, as we have noted, are a conservative, Afrikaans-speaking group. There are also some striking nonagreements. The two groups of university women are especially idiosyncratic, agreeing with one another's choices but not with the university Afrikaans males or with any of the technical college males. Both these female groups agree more strongly with the technical college females than with the university English males, suggesting that gender differences may override language and value differences.

Preference ranking and preference clusters

Tables 7a and 7b give the mean rank order assigned to each of the 30 extracts by students and librarians in **rank order sequence.** The genre categories in the table are self-explanatory, except perhaps for *human drama* and *human nature*. By the former is meant a character study which is carried by a strong narrative line, allowing the work to be read on two levels, as an adventure and as a study of behavior. In the latter, however, the focus is on character itself rather than on narrative, so that the story-

Table 7b   Stepwise clusters in the mean preference rankings of 30 extracts by 44 librarians

Rank order	Rank M	Rank SD	Cluster no.	Step to next	Range within cluster	Book code	Author	Genre
					LIBRARIANS			
1	6.3	4.7	1	1.1	2.2	13	Gavin Lyall	Crime and violence
2	7.2	5.3				98	Wilbur Smith	War and love
3	7.9	5.0				51	Peter O'Donnel	Crime and violence
4	8.2	7.2				16	Denise Robins	Romance
5	8.5	6.3				30	Agatha Christie	Detective
6	9.6	7.0	2	2.1	4.3	85	Arthur Hailey (torture extract)	Crime and violence
7	10.2	7.1				55	Arthur Hailey (fraud extract)	Crime and violence
8	10.3	5.2				44	Graham Greene	Human drama
9	10.3	6.4				86	Ian Fleming	Crime and violence
10	11.3	5.7				29	Ayn Rand	Human drama
11	11.6	7.8				38	Louis L'Amour	Western
12	12.1	6.6				43	Hunter Thompson	Narrative nonfiction
13	12.2	7.2				62	Essie Summers	Romance
14	12.5	6.9				71	James Michener	Human drama
15	13.5	6.6				46	Henry James	Human nature
16	13.9	7.8				52	Somerset Maugham	Human drama
17	16.0	7.7	3	2.0	3.8	14	Jane Austen	Human nature
18	17.2	6.0				66	Djuna Barnes	Human nature
19	17.2	6.9				22	James Joyce	Human nature
20	17.5	6.3				49	Saul Bellow	Human nature
21	18.2	5.9				36	Richard Gordon	Humor
22	18.2	5.4				76	Joseph Conrad	Human nature
23	18.8	7.3				11	Herman Melville	Human nature
24	19.8	5.6				20	Charles Dickens	Human drama
25	21.8	6.2	4	3.5	0.8	63	Loren Fessler	Narrative nonfiction
26	22.6	4.9				77	David Ogilvie	Narrative nonfiction
27	26.1	5.0	5	–	2.1	17	Franklin Moore	Textbook: concrete
28	26.5	3.3				83	Gray's *Anatomy*	Textbook: concrete
29	27.4	2.6				53	Harrison Gough	Textbook: abstract
30	28.2	2.2				23	Nathan Rotenstreich	Textbook: abstract

seeking reader is soon disappointed.

Reference to the **mean rank** column indicates that the progression from one rank to the next is uneven: In some cases the difference is as little as 0.03, and in other cases as much as 5.1 (see Ranks 12-13 and 26-27 in Table 7a). By observing where the relatively larger steps from rank to rank occur, it is possible to separate the 30 extracts into **rank clusters;** the **step to next** column indicates by how much the mean rank is incremented between that cluster and the next. For the students, these increments

are 1.1, 1.5, 2.6, and 5.1; and for the librarians, they are 1.1, 2.1, 2.0, and 3.5. For both groups, these steps are unambiguously larger than the other rank-to-rank increments in that section of the rank order in which they occur.

Among the **students,** the 18 extracts in the first and second clusters include all the best-sellers and genre works, and two twentieth-century classics. There is then a sharp step of 1.5 down to the next cluster, which takes in all the nineteenth-century fiction, together with the near-classics, Bellow and Barnes. Narrative

nonfiction is well separated from this "heavy fiction" cluster by a step of 1.6: Despite Ogilvie's racy style and the bestseller performance of his *Confessions,* he is lumped together with Fessler's *China.* The largest step down (5.1) is to the textbook nonfiction, of which the concrete material (anatomy and production control) appears to have been marginally more acceptable to readers than the abstract (psychology and philosophy).

Among the **librarians,** the nonfiction choice pattern (Ranks 27 to 30) exactly follows that of the students, and is indeed considerably clearer, with a step of 0.9 separating the concrete from the abstract. The narrative nonfiction fares equally badly, and above these, the classics now form a clear cluster, though, incongruously, Gordon's racy seafaring humor falls among these. It is striking that of the 16 items falling into the librarians' first two clusters, all except one are the same as the students' first 16 choices.

The rank clustering suggests that, in selecting reading matter, readers may not attempt to differentiate between all items in a bookshop or library array, but instead may assign books to discrete classes of desirability, such that the members of each class are largely undifferentiated, whereas classes are clearly distinct from one another. It may be that clustering is essentially dichotomous, separating books that are desirable for leisure reading (here, the first 16 to 18 items) from those that are undesirable — namely, all or nearly all the classics, some of the narrative nonfiction, and all the didactic nonfiction.

Table 7 shows that the student sample ranked the two passages from *The Money Changers* (Items 55 and 85) within three places of one another, whereas the librarians, with the clarity of vision given to those who judge others rather than themselves, found the two passages to be virtually equivalent, placing the torture extract in the 6th position, and the fraud extract 7th. These near-equivalences support the view that brief extracts can reliably represent the books from which they are taken. Also interesting is the unanimity amongst librarians that the torture passage would be popular: The standard

deviation on their ranking of this passage (7.0) is almost identical to that for the fraud passage (7.1). For the students, however, more ambivalence attached to the ranking of the torture passage ($SD = 8.1$) than the ranking of the fraud passage ($SD = 6.6$), possibly reflecting the moral conflict readers may have felt about enjoying the reprehensible.

In summary, the data show impressive stability of choice patterns across important moderator variables — age, gender, home language, and value system. But because of the limited cultural and linguistic diversity of the sample, no conclusions can be drawn about the wider, cross-cultural stability of the ludic continuum.

Merit, difficulty, and readability rankings

The availability of preference, merit, and difficulty rankings for the same 30 extracts by a variety of different subject groups, in addition to two sets of readability scores, allows us to address questions about the impact of the social value system (and especially the Protestant ethic) on readers' perceptions of literary merit, and the ways in which such merit judgments are related to preferences, on the one hand, and perceived difficulty, on the other.

Intrinsic and extrinsic merit criteria. Table 5 shows that merit rankings had high intragroup consistency ($p < .01$ for all W values), and Table 8 shows that both professional critics and lay readers (students and librarians) ranked the 25 fiction and near-fiction items in significantly similar merit sequences. This homogeneity seems to mean that all groups shared a common set of literary value judgments, and that the ability of the critics to distinguish good literature from trash is not an arcane gift, the product of their heightened sensitivity to textual qualities, but rather, an ability as universal as knowing the difference between a good story and a bad one. However, such a subversive deduction might be incorrect. Groups such as the branch library assistants who had only a high school education, for whom English was a second language, would have had very little exposure to the English classics or to elite style. If they and similar groups were, nonetheless, able to carry

Table 8 Rank order correlation coefficients (Spearman's *rho*) for mean merit and preference rankings of various groups

Merit Ranking		Merit Ranking				
Subjects	*n*	Subjects	*n*	Items[a]	*rho*	*p*
UNISA English lecturers	10	UPE English lecturers	3	25	.88	.001
UNISA English lecturers	10	Professional librarians	23	25	.75	.001
UNISA English lecturers	10	Branch library assistants	21	22	.51	.05
UNISA English lecturers	10	English students	27	25	.68	.001
UPE English lecturers	3	Senior book selectors ("Generals")	5	25	.66	.001
UPE English lecturers	3	Experienced branch assistants ("Privates")	5	25	.51	.05
UPE English lecturers	3	Professional librarians	23	25	.62	.001
UPE English lecturers	3	Senior professional librarians	10	25	.64	.001
UPE English lecturers	3	English students	27	25	.80	.001
Prof. librarians with BBib degree	13	Prof. librarians without BBib degree	9	22	.71	.001
Senior book selectors ("Generals")	5	Experienced branch assistants ("Privates")	5	22	.61	.01

Merit Ranking		Preference Ranking[b]				
Subjects	*n*	Subjects	*n*	Items[a]	*rho*	*p*
UPE English lecturers	3	All students	129	25	−.58	.001
UPE English lecturers	3	University Female English students	34	25	−.18	n.s.
UPE English lecturers	3	University Female Afrikaans students	10	25	−.11	n.s.
UPE English lecturers	3	University Male English students	14	25	−.57	.001
UPE English lecturers	3	University Male Afrikaans students	5	25	−.72	.001
UPE English lecturers	3	Tech. College Female English students	3	25	−.52	.01
UPE English lecturers	3	Tech. College Male English students	36	25	−.84	.001
UPE English lecturers	3	Tech. College Male Afrikaans students	19	25	−.73	.001
Professional librarians	23	All librarians	44	25	−.69	.001
Branch library assistants	21	All librarians	44	25	−.46	.05
Prof. librarians with BBib degree		With themselves	13	25	−.64	.001
Prof. librarians without BBib degree		With themselves	9	25	−.03	n.s.
Senior book selectors ("Generals")		With themselves	5	25	−.43	.05
Experienced branch assistants ("Privates")		With themselves	5	25	−.08	n.s.
UNISA English lecturers		With themselves	10	25	.90	.001
English students (1978)		With themselves	27	11	−.63	.001

[a]Number of items compared.   [b]For the librarians, this was an issue frequency ranking.

out merit rankings that matched those of the critics (albeit at relatively low *rho* values), they may have drawn on a more accessible criterion than the complex and abstract construct of literary merit. A likely substitute criterion might be difficulty. The Protestant ethic teaches that pain and virtue are constant companions, and there are strong positive correlations between merit and difficulty rankings carried out by the branch library assistants with only a high school

Table 9   Rank order correlation coefficients (Spearman's *rho*) between Fog Index rankings and subjects' mean merit rankings

Subjects	n	Degree	Yrs. of School	rho	p
Librarians					
Branch assistants					
With high school degree	9	h.s.	12	.53	.01
With university degree	5	BAHons BA	15	.43	.05
Professional librarians	23	BBib	16	.49	.05
Literary critics					
UPE English lecturers	3	MA	19	.46	.05
UNISA English lecturers	10	MA PhD	19	.35	n.s.

Note. df = 23.

education ($rho = .78, p < .001$), those with a BA ($.60, p < .01$), and the "privates," with a high school degree but many years' experience ($.47, p < .05; df = 20$ for all).

Clearly, substituting difficulty for literary merit is improper, and would lead to the conclusion that the poetry of T.S. Eliot and a Chevrolet workshop manual, being of equal difficulty, are of equal merit. Increased literary sophistication might therefore be expected to attenuate the spurious relationship between merit and difficulty. Table 9 makes use of the strong correlation between Fog Index readability scores (reported below) and subjects' difficulty rankings ($rho = .71, p < .001$, for the library assistants) to suggest that this might be so: As number of years of education increases, correlations between merit and difficulty tend to decline.

The best medicine tastes the worst. The second part of Table 8 demonstrates a further effect of values based on the Protestant ethic — namely, the belief that merit and preference are inversely related: All 10 correlation coefficients are in the negative direction, and of these, 8 are significant, indicating that items judged to have more literary merit either by professional critics or by the subjects themselves were considered to be less desirable for ludic reading. In rating the merit of their own relaxation preferences,

Table 10   Effects of education on preference: Rank order correlation coefficients (Spearman's *rho*) for mean preference rankings of English students at initial testing and 2-year follow-up

Preference Ranking		Preference Ranking				
Subjects	n	Subjects	n	Items[a]	rho	p
English students (at first testing)	27	All students	129	30	.56	.01
English students (at 2-yr. follow-up)	27	All students	129	30	.37	.05

Preference Ranking		Merit Ranking				
Subjects	n	Subjects	n	Items[a]	rho	p
English students (at first testing)	27	UPE English lecturers	3	25	.19	n.s.
English students (at 2-yr. follow-up)	27	UPE English lecturers	3	25	.39	.01

[a]Number of items compared.

the 27 follow-up students, with a *rho* value of -.63, also regarded the material they prefer to relax with as devoid of merit. The librarians take a similarly pessimistic view of the public, seeing preference as the inverse of merit.

The data indicate that, for all subject groups, merit and preference rankings are inversely related. The close association between difficulty and merit rankings supports the notion that these readers' value systems are under the sway of the Protestant ethic conviction that pain and virtue are allied. For some groups — notably those with library science degrees — this conviction seems to be supplemented by a social pessimism which holds that mass taste is depraved and that literary merit judgments may therefore be derived from a mirror image of mass taste.

Effect of education on merit and preference rankings

The available data on the follow-up sample of English students may throw light on an issue of interest to educators — namely, the effects of a liberal arts education on leisure reading preferences and judgments of literary merit.

The preference patterns of these 27 students were internally consistent both at initial testing and at follow-up 2 years later, with concordances of .35 and .36 ($p < .001$ for both) in

Table 11   Extracts ranked from most to least readable by the cloze measure and the Fog Index

| Cloze Ranking | | | Rank | Fog Index Ranking | | |
Author	Cloze score	SD	Book code		Book code	Fog Index	Author
Charles Dickens	14.08	1.94	20	1	51	5.20	Peter O'Donnel
Somerset Maugham	13.77	1.19	52	2	46	5.84	Henry James
Louis L'Amour	12.69	2.02	38	3	30	5.90	Agatha Christie
Loren Fessler	12.08	2.30	63	4	44	6.64	Graham Greene
Henry James	11.92	2.59	46	5	62	6.76	Essie Summers
*Wilbur Smith	11.85	1.88	98	6	66	6.88	Djuna Barnes
*Jane Austen	11.85	1.66	14	7	16	7.10	Denise Robins
David Ogilvie	11.69	1.98	77	8	86	7.26	Ian Fleming
Ayn Rand	11.54	1.60	29	9	71	7.55	James Michener
Hunter S. Thompson	11.31	2.61	43	10	13	7.66	Gavin Lyall
Richard Gordon	10.92	2.02	36	11	85	7.96	Arthur Hailey (torture)
Graham Greene	10.35	2.07	44	12	76	8.13	Joseph Conrad
Ian Fleming	10.46	3.20	86	13	29	8.80	Ayn Rand
*Essie Summers	10.31	2.40	62	14	36	9.08	Richard Gordon
*Denise Robins	10.31	1.14	16	15	22	9.52	James Joyce
*Agatha Christie	10.23	1.76	30	16	38	9.68	Louis L'Amour
*James Joyce	10.23	2.12	22	17	49	9.80	Saul Bellow
Franklin Moore	9.85	1.75	17	18	98	10.00	Wilbur Smith
James Michener	9.62	2.40	71	19	20	10.04	Charles Dickens
Arthur Hailey (torture)	9.54	2.79	85	20	17	10.48	Franklin Moore
Gray's *Anatomy*	9.46	2.40	83	21	77	11.03	David Ogilvie
*Peter O'Donnel	9.38	2.37	51	22	11	12.05	Herman Melville
*Gavin Lyall	9.38	1.21	13	23	55	12.52	Arthur Hailey (fraud)
Saul Bellow	8.38	1.50	49	24	43	12.84	Hunter S. Thompson
Djuna Barnes	7.31	1.14	66	25	52	14.34	Somerset Maugham
Joseph Conrad	7.15	2.45	76	26	63	14.80	Loren Fessler
Nathan Rotenstreich	7.08	2.30	73	27	14	15.79	Jane Austen
Arthur Hailey (fraud)	6.69	2.02	55	28	23	18.72	Nathan Rotenstreich
Herman Melville	5.46	1.86	11	29	83	20.25	Gray's *Anatomy*
Harrison Gough	4.77	1.80	53	30	53	20.72	Harrison Gough

*Tied ranks

Table 12   Rank order correlation co-
efficients (Spearman's *rho*) for
Fog Index and cloze rankings in
relation to mean difficulty, merit,
and preference rankings

Subjects	*n*	Items[a]	Fog		Cloze	
			rho	*p*	*rho*	*p*
DIFFICULTY RANKINGS						
(easiest to hardest)						
Branch library assistants	21	30	.68	.001	.33	n.s.
With university degree	5	30	.59	.001	.36	.05
With high school degree	9	30	.71	.001	.22	n.s.
MERIT RANKINGS						
(worst to best)						
UNISA English lecturers	10	25	.35	n.s.	.05	n.s.
UPE English lecturers	3	25	.46	.05	.18	n.s.
Professional librarians	23	25	.49	.01	.00	n.s.
Branch library assistants	21	25	.57	.01	–	–
With high school degree	9	25	.54	.01	.19	n.s.
PREFERENCE RANKINGS						
(most to least preferred)						
All students	129	30	.60	.001	.12	n.s.
All librarians	44	30	.61	.001	.14	n.s.

[a]Number of items in array.

each of these two years. Also, the rank order
correlation coefficient between their 1976 and
1978 preference rankings is .85 ($p < .001$). But
behind this depressing finding, which seems to
indicate that 2 years of expensive education
have left reading preferences untouched, lie
some subtle changes (Table 10). The initial
agreement of these English majors with the stu-
dent body from which they were drawn gener-
ated an *rho* of .56; this fell to .37 on follow-up.
This appears to be a substantial movement away
from the views of their peers, even allowing for
contamination of the initial result by the pres-
ence within the larger sample of these 27 sub-
jects. A clue to the origin of this shift is

provided by comparing the initial and follow-up
preference rankings of the 27 students with the
merit rankings of their teachers, the three UPE
English lecturers. Initially, such a comparison
produced a nonsignificant *rho* of .19, but 2
years later there was a correlation of .39 ($p <
.01$) — again a substantial difference, and statis-
tically uncontaminated. These figures suggest
an internalization of cultural judgments, which
may represent an effect of the educational proc-
ess by which social values are propagated
among adults and internalized by them.

Relation to readability rankings. Readabil-
ity rankings, as assigned by the Fog Index and
the cloze test, are set out in Table 11. The rank
order correlation coefficient between these
rankings is *rho* (28) = .01, effectively zero. Ta-
ble 12 gives the rank correlation coefficients be-
tween Fog and cloze rankings, on the one hand,
and difficulty, merit, and preference rankings,
on the other. The Fog Index shows significant
positive relations with all three variables,
whereas the cloze has low to very low and non-
significant correlations in all cases except one.
On the cloze, such a failure to predict difficulty
rankings seems to support the "most surprising
results" reported by Entin and Klare (1978),
who found near-zero *rho* values for compari-
sons of dash-line cloze difficulty rankings with
comprehension test difficulty.

However, the claims made on behalf of the
cloze as a comprehension measure are so en-
trenched in the readability literature that a fur-
ther small study was undertaken, the results of
which are reported in Table 13. Six of the cloze
subjects carried out preference sorts, and their
preference rankings were compared with the
rank sequence of their own cloze scores. Here
the direct interaction of the reader with the text
during the cloze, which purports to measure
comprehension difficulty, is pitted against that
same reader's preferences, and yet the results in
4 out of 6 cases are found to be nonsignificant.
This result cannot be attributed to idiosyncratic
preference rankings, because each subject's
preferences correlated with the mean preference
rank for all 6 subjects. The failure of the cloze
to relate to reader ratings of passage difficulty,

Table 13   Rank order correlation co-
efficients (Spearman's *rho*) be-
tween preference ranking and
cloze ranking for 6 subjects

| | Subject's Cloze Ranking | | | |
| | Subject's Preference Ranking | | Mean Group Preference Ranking (*n* = 6) | |
Subject Code[a]	*rho*	*p*	*rho*	*p*
511/521	.49	.01	.51	.01
512/522	.30	n.s.	.66	.001
513/523	.12	n.s.	.58	.001
514/524	.32	n.s.	.70	.001
515/525	.32	n.s.	.46	.01
516/526	.52	.01	.66	.001

[a]First number is for cloze; second is for same subject for
preference sort.

merit, or preference casts doubts on its appro-
priateness as a measure of readability, and sug-
gests that it may be measuring an undefined
construct in the domain of language production
(Nell, in press).

STUDY 4
The Physiology of Ludic Reading

In contrast to the phenomenological rich-
ness of the preceding and following sections,
the laboratory study of the physiological ac-
companiments of ludic reading reported be-
low—which was the largest and most complex
of the five comprising this investigation—
threatens to trivialize the ludic reader's experi-
ence. Figure 4 suggests it may also have
dehumanized it. However, a *cognitive psy-
chophysiology* (McGuigan, 1979) need not be
reductionist. On the contrary, linking enjoy-
ment to its biological roots allows the phenome-
nology of reading to be considered in the
context of the growing understanding of rela-
tions between thought, arousal, and pleasure

(Nell, in press) that derives from Sperry's work
(1969, 1977) on brain-consciousness relation-
ships, from attention theory (Kahneman, 1973;
Pribram, 1986), and from optimal level-of-
arousal theories of personality functioning
(Eysenck, 1967; Zuckerman, 1979).

One outcome of these trends is Daniel
Berlyne's "new experimental aesthetics" (1973),
which holds that collative conflict-producing
variables "seem to be the crux of the aesthetic
phenomenon" (1973, p. 9). When one pursues
an aesthetic gratification (such as reading a
book) "for its own sake," argues Berlyne (1969),
the inner consequence that is rewarding to the
central nervous system is **arousal**: His two-fac-
tor theory of *hedonic value* (1971) holds that
pleasure derives from arousal boosts (moderate
arousal increments) and arousal jags (relief
when an arousal rise is reversed). A useful phe-
nomenological extension of Berlyne's behavior-
ist paradigm is *reversal theory* (Apter, 1979),

Figure 4
Subject during minor sensory deprivation
(Periods G and H)
(Beckman electrodes for EMG2 are visible at the mouth, and those
for EMG3 under the chin. Electrode leads for EMG1 emerge from
under the translucent goggles. Also visible are the earth lead in the
right ear and the thermistor under the left nostril.)

which can accommodate the hedonic value of prolonged arousal or relaxation as well as sudden *reversals* from one to the other. One example of such a reversal is provided by the bedtime reader: After a long period of pleasurable arousal following the exploits of Magnus Pym, the perfect spy (Le Carré, 1986), the reader lays the book aside, switches off the light, and at once drifts into a state of delightful relaxation.

Operational hypotheses for Study 6 were derived from the literature reviewed above, and are presented in the following section in the context of the task periods to which they relate.

Method

Subjects

Subjects were the 33 ludic readers described in Study 1.

Apparatus

The electrophysiological transducers (described below) were led to an OTE 16-channel polygraph, producing a hard-copy trace. The polygraph was interfaced with an Ampex PR2000 16-channel analog tape recorder and a Systron-Donner time code generator operating in a 10-second frame. The IRIG-B slow-code format was user-legible and provided the time units for all subsequent data analysis. A white noise generator produced a high-intensity sound through a loudspeaker in the laboratory, masking other sounds.

Procedure

Each subject was run for two identical laboratory sessions one day apart. Total time per subject per laboratory session, including initial interview, electrode placement, and debriefing, was 3 hours. As noted in Study 2, subjects lay in a semisupine position in the laboratory with their backs to an observation window.

Electrophysiological recording. Response systems (selected following a taxonomy derived from Berlyne, 1971, Lang, 1979, and McGuigan, 1978), recording sites, and transducers were as follows:

Electromyograms (EMGs) were recorded from three sites, using three pairs of 16mm silver/silver chloride Beckman skin electrodes:

1. The occipitofrontalis (forehead) muscle (**EMG1**).
2. Levator and depressor anguli oris, namely the smiling/pouting muscles at the corners of the mouth (**EMG2**).
3. The platysma, the sheet-like muscle between chin and larynx (**EMG3**).

The other variables were as follows:

4. Respiration rate (**RR**): exhalations per 10 seconds, as monitored by a thermistor taped beneath a nostril.
5. Skin potential (**SPR**), as recorded from a plantar site, thus avoiding the movement artifacts that would have arisen had a palmar location been used. Transducers were a pair of zinc/zinc oxide plates, one under the arch of the foot and one at an inactive site between the ankle and the tibia.
6. Heart rate (**HR**): beats per 10 seconds.
7. Heart period (**HP**): mean beat-to-beat interval per 10 seconds. Both these cardiac activity parameters were monitored by stainless steel plate electrodes in the Lead II configuration (left arm and right leg).

Some of these sites and transducers are illustrated in Figure 4.

Task periods. The 9 task periods (F through M, and Q) and the hypothesized response trends in each for EMG, RR, and SPR, are described below (there were no Periods A through E). Cardiac responding is considered separately.

Period F. Five minutes relaxing with eyes shut, used as a baseline responding rate.

Periods G (10 minutes) **and H** (15 minutes). Here, subjects kept their eyes open while wearing translucent goggles (Figure 4) and listening to white noise. Following Berlyne's suggestion that boredom engenders high arousal, (1960, p. 189), it was hypothesized that arousal would rise steadily through this period of mild sensory deprivation.

Period I. Ludic reading for 30 minutes. This was the criterion period with which all

other task periods were compared. Stimulus equivalence – the experience of ludic reading – was therefore achieved by having each reader select a book, following the selection procedure that was described in Study 2. Experimental aesthetics predicts that raised, fluctuating arousal will be associated with perceived pleasurableness. In this context it is important to recall the evidence produced in Study 2 that readers found ludic reading in the laboratory to be functionally equivalent to ludic reading under natural conditions.

Period J. Subjects were given the following instruction at the outset of this 5-minute period of eyes-shut relaxation: "Lay the book aside, close your eyes, and relax completely for 5 minutes. Go to sleep or stay awake, just as you please." This task was designed to emulate the transition from ludic reading to sleep; both arousal and its lability were expected to drop to baseline levels or lower.

Next came a set of four cognitive tasks, through which it was hoped to determine which kinds of mental activity elicited reading-like responses, and which did not. **Period K** was a 3-minute work reading task, using a cognitive psychology text (Fodor's *The Language of Thought*, 1975). Subjects were told they would be asked at the end of the session to sum up the content of what they had read. In **Period L**, subjects looked at a series of affectively neutral photographs for 2 minutes, and **Period M** consisted of 6 mental arithmetic tasks of increasing complexity, with covert responding. In **Period Q**, subjects were asked to perform 3 different visualizing tasks for a total of 90 seconds.

It was anticipated that **arousal** during hard reading (Period K) and mental arithmetic (M) would be higher than during ludic reading, which is response-free and subjectively effortless. Because one of the visualizing tasks involved computation (e.g., "When a red apple is cut in half and halved again, how many sides will be red and how many white?"), it was anticipated that arousal in this period would be at about the same level as during mental arithmetic (Period M).

The course of **cardiac responding**, during ludic reading and during the four other cognitive task periods (K, L, M, Q), will be determined by the outcome of competing and simultaneous response tendencies. **Deceleration** (the *bradycardia of attention*: Lacey & Lacey, 1978, p. 99) accompanies the detection of external stimuli, whereas **acceleration** occurs during cognitive processing and responding (Lacey, 1967). The accelerative tendency will be augmented if the reading content includes action-instigating cues (Lang, 1979). If ludic reading is dominated by cognitive processing, acceleration will ensue; if it is concerned more with stimulus detection, as if the page were the world, deceleration will win out. For the other cognitive tasks, acceleration can be anticipated in hard reading and mental arithmetic (K and M), and deceleration in the visual tasks (L and Q). In the passive, nonprocessing periods (F, G, H, and J), deceleration is to be expected. It should be noted that **heart period** – mean beat-to-beat interval in a specified time period – is an imperfect reciprocal of **heart rate**, which may remain relatively constant though period varies markedly (Heslegrave, Ogilvie, & Furedy, 1979).

Digitization, score conversion, and data analysis

The tape-recorded analog data were digitized at a sampling frequency of 1,024 hertz, generating 2,905 megabytes of raw data, which were converted to 7 **standard-unit scores** per 10-second epoch for each of the 33 subjects. Standardization was achieved by referencing area-under-curve scores (EMG and SPR) to a calibration signal, so that scores for all 33 subjects were comparable. Using these scores, arousal and variability levels were calculated for each subject separately and for all subjects pooled for each of the 7 variables and for 8 of the 9 task periods (L was omitted). For the pooled scores, mean standard deviations were computed as an index of response lability, and are henceforth referred to as **variability scores (VS)**.

Determining which tasks differed significantly from the criterion period of ludic reading called for multiple comparisons with the criterion. The methodological problems associated

Table 14   Mean scores and variability scores on seven physiological variables during eight task periods

	Task Period[a]							
	F Relaxing (30)	**G** Boredom (60)	**H** Boredom (90)	**I** Ludic Reading (180)	**J** Relaxing (30)	**K** Work Reading (18)	**M** Math Tasks (4)	**Q** Visual Tasks (8)
Variable								
EMG1 ($n = 32$)								
M	214,765	296,187	304,716	314,220	212,823	310,443	244,998	251,061
VS	30,450	56,706	54,919	56,021	32,713	61,049	32,819	33,931
EMG2 ($n = 32$)								
M	8,716.07	9,546.37	9,832.57	10,357.70	8,943.57	9,920.67	9,963.23	9,234.99
VS	1,318.94	2,298.18	2,547.06	5,472.58	1,869.39	3,822.75	1,630.29	1,560.74
EMG3 ($n = 32$)								
M	189,081	201,978	207,082	210,498	177,669	211,639	182,759	174,767
VS	21,396	31,837	36,373	37,710	29,232	28,788	26,202	20,249
RR ($n = 31$)								
M	2.8863	2.8772	2.8288	2.9491	2.7638	2.9768	2.9764	2.8825
VS	0.1587	0.2008	0.1324	0.1270	0.1035	0.1835	0.2656	0.1916
SPR ($n = 26$)								
M	14,530.2	15,453.7	15,572.3	22,071.7	15,456.0	20,474.6	19,574.6	14,721.4
VS	7,151.9	6,438.9	6,744.5	10,510.1	3,669.2	7,956.3	5,256.5	4,458.2
HR ($n = 29$)								
M	12.1325	11.6663	11.5398	11.8585	11.8680	12.3853	12.7436	12.3619
VS	0.2380	0.1425	0.2597	0.1626	0.1841	0.4361	0.2678	0.2050
HP ($n = 29$)								
M	0.8767	0.8748	0.8939	0.8639	0.8667	0.8400	0.8019	0.8281
VS	0.0290	0.0221	0.0964	0.0866	0.0232	0.2221	0.0171	0.0165

[a]Number in parentheses indicates duration of task period in 30-second epochs.

with this repeated-measures design (Abt, 1979) were addressed by employing Dunnett's *t* test for multiple comparisons only if there was significant variance for all treatments (i.e., task periods) combined (Winer, 1971).

Results and Discussion

Graphic displays of individual subject responding on the 7 variables across the 8 task periods were not helpful in demonstrating response trends. However, response means and variability scores for each of the 8 periods for all 33 subjects pooled did yield interpretable results. These are given in standard score units in Table 14, and are plotted in Figure 5. In this plot, points overlaid by squares are significantly different from the criterion period of ludic read-

ing (I). A huge quantity of data—1.395 million data points per row—has been consolidated in each plot unit of Figure 5.

Arousal trends

The most striking feature of the trends thrown into relief by Figure 5 is that although ludic reading (I) is experienced as effortless (Study 5) and described as "relaxed," it is on the contrary physiologically more aroused and more labile than baseline responding. Though counterintuitive, this finding accords with the predictions of experimental aesthetics. The second striking feature is the predicted deactivation that sets in immediately when subjects stop reading and close their eyes (J). The delights of bedtime reading may in part be attributed to this precipitous fall in arousal, not only in skeletal muscle but also in skin potential, controlled by the autonomic nervous system: Berlyne (1971)

Figure 5
Means and variability scores for all subjects
pooled on seven physiological variables across
eight task periods in standard score units

(Squares indicate significant Dunnett's *t* values)
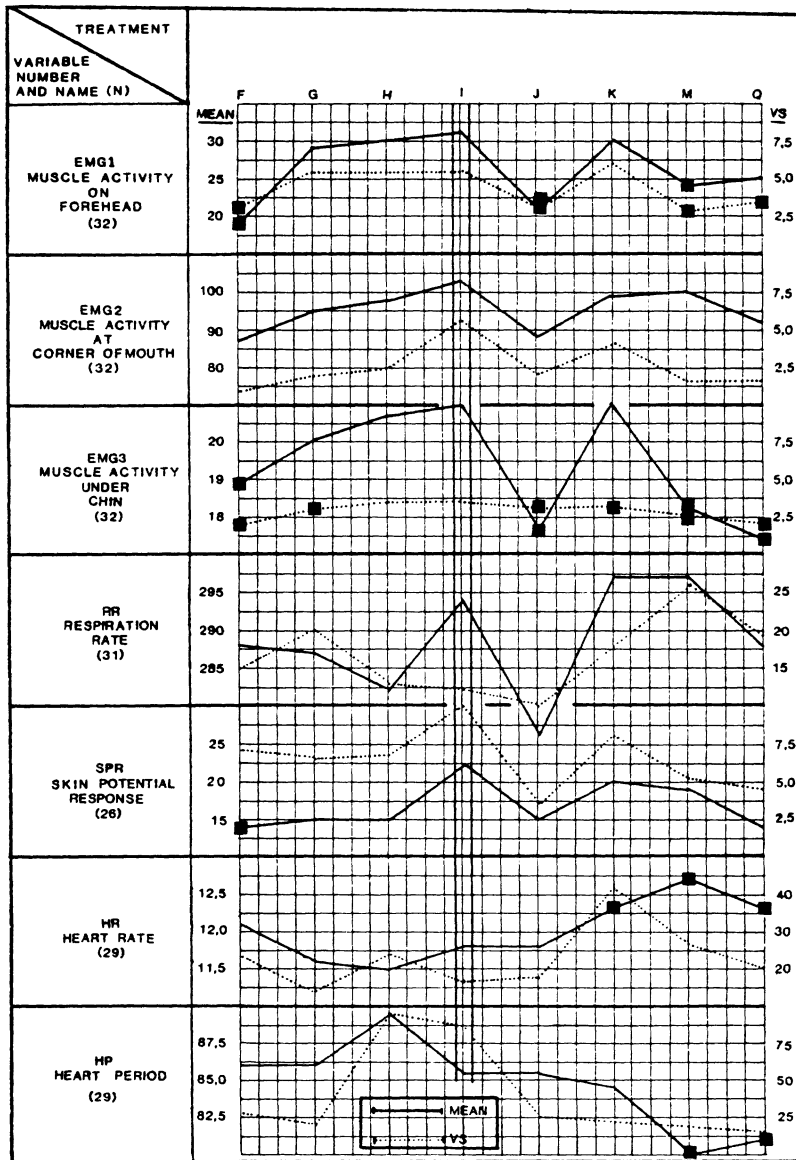
has argued that a sudden drop in arousal is pow-erfully rewarding.

In skeletal muscle, and rather less for skin potential response, arousal increases over baseline during Periods G and H, supporting the view that boredom is an unpleasantly activated state (Berlyne, 1960). The hypothesized arousal increase during hard reading (K) and mental arithmetic (M) does not occur: Again counterintuitively, these activities are not more aroused than ludic reading, and are frequently less so. This conflicts with Kahneman's (1973) well-supported view that increased effort entails increased arousal. The high level of activation of EMG3, the platysma muscle, during ludic reading (I) and hard reading (K) is intriguing, suggesting that subvocalization occurs. However, this electrode placement was just as sensitive to swallowing, so it is equally possible that reading is associated with salivation!

The outcome of the conflicting forces operating on heart rate during ludic reading (I) is decelerative in relation to baseline, suggesting that during ludic reading attention to external stimuli takes precedence over cognitive processing. Because the bradycardia of attention is pre-eminently associated (Lacey, 1967) with the orienting response (Sokolov, 1963), this finding suggests that events on the printed page have at least some reality status, eliciting nonhabituating orienting responses in these readers. Metaphorically, the page thus stands to the reader as a flower to a bee, and not, as one might have argued, as a picture of a flower to a bee: flat, odorless, and hopelessly unchanging.

As predicted, heart rate accelerates during the hard reading and mental arithmetic tasks (K and M), indicating that here, contrary to the situation in ludic reading, cognitive processing has more importance than stimulus detection. The periods of mixed visualizing tasks (Q) were rather less aroused than Periods K and M.

Significance of differences

Inspection of Figure 5 indicates that mean scores produced more significant differences from criterion than did variability scores. Of the variables, that with the greatest relational fertility was EMG3, the platysma muscle, with

10 significant values of t, followed in sequence by EMG1 (frontalis) with 7, heart rate with 3, heart period with 2, and skin potential response with 1. The failure of EMG2 to generate significant differences with criterion is surprising, as many subjects showed greatly increased expressive lability, smiling, laughing, and grimacing while reading. The relative infertility of cardiac responding should be understood in the light of the heart's very rapid responsivity to cognitive and affective events, so that cardiac activity is most effectively used as a phasic measure, and not, as here, averaged over long periods.

Enjoyment and arousal

Are there discernible trends in physiological arousal during the reading of most-liked pages, which Study 2 showed were read significantly more slowly than all other pages? Two measures (mean response level for all subjects, and variability score, giving response lability) were available for each of 6 variables, as shown in Table 15.

Table 15   Mean scores and variability scores on six physiological variables for most-liked pages and all other pages

Variable	Mean Score		Variability Score	
	M	SD	M	SD
EMG1				
Most-liked	305,398	244,278	47,817	63,367
All other	283,793	210,250	56,605	52,501
EMG2				
Most-liked	10,994	13,094	4,198	8,473
All other	9,262	6,191	3,677	3,314
EMG3				
Most-liked	220,906	146,647	36,976*	32,674
All other	210,503	109,823	53,177*	40,895
RR				
Most-liked	2.868	0.831	0.504	0.226
All other	2.828	0.805	0.561	0.159
SPR				
Most-liked	13,872	8,251	7,434	5,639
All other	14,506	8,610	8,318	6,557
HR				
Most-liked	11.065	2.745	0.816	1.063
All other	10.933	2.980	0.750	0.458

*$t(29) = -4.01, p < .01$.

On 5 of the 6 measures (the exception was skin potential response), mean responding was elevated during the reading of most-liked pages. Response lability was lower on 4 of the 6 variables, and higher for EMG2 (muscle activity at the corner of the mouth) and for heart rate. However, though the trend is clear, only 1 of the 12 differences reached statistical significance, namely, the decreased lability of EMG3, the platysma muscle, $t(29) = 4.01, p < .01$.

The trend of the means suggests that heightened physiological arousal contributes to the perceived pleasurableness of most-enjoyed reading, as predicted by experimental aesthetics. The increased lability on EMG2 suggests that facial expressiveness not only increases during most-enjoyed reading, but is also more variable. However, the failure of response lability on 4 of the 6 measures to increase as hedonic tone rises is countertheoretical.

The increase in heart rate during the reading of most-liked pages suggests that cognitive processing takes precedence over stimulus detection in this period, though the large increase in heart rate lability indicates that competing decelerative responses, which are associated with the orienting response, are marked during most-enjoyed reading.

STUDY 5
The Sovereignty of the Reading Experience

Little in the study of consciousness is as striking as the economy of means and precision of outcome with which skilled readers are able to exercise absolute control over the content and quality of their own consciousness. In the last of these five studies, a phenomenology of ludic reading is derived from the literature on dreaming, fantasy, and trance, and ludic readers' accounts of the sovereignty conferred on them by their reading are considered in the light of this phenomenology. In addition, quantitative data derived from responses to questionnaire items and personality tests are analyzed. In the next

four sections, some fantasy process analogs of reading trance are considered.

Dreaming and reading

In Hildebrandt's 1875 book about dreams, which Freud cites with approval (1900/1968, pp. 9, 67), he writes that when we fall asleep, our whole being, with all its forms of existence, "disappears, as it were, through an invisible trapdoor." This is also the experience of the ludic reader, who sinks "through clamorous pages into soundless dreams" (Gass, 1972, p. 27). Clearly, dreaming — and especially daydreaming — is in certain ways an analog of reading. The dreamer knows that even if his dreams have not come from another world, they "at all events carried him off into another world" (Freud, 1900/1968, p. 7). Moreover, reading and dreaming share a cognitive passivity, because the work they do is subjectively effortless.

Freud's most important statement about the psychology of literary creation and of reading is *The Relation of the Poet to Daydreaming* (1908/1957); here, "poet" means "the less pretentious writers of romances, novels and stories, who are read all the same by the widest circles of men and women" (p. 179). The task Freud sets himself in this essay is to understand "the secret of popularity in art," namely, how "that strange being, the poet, is able to carry us with him in such a way and to rouse emotions in us of which we thought ourselves perhaps not even capable." The writer's skill, concludes Freud, lies in overcoming the feeling of repulsion daydreams have for others by disguises and aesthetic bribes, "in order to release yet greater pleasure arising from deeper sources in the mind . . . putting us in a position where we can enjoy our own daydreams without reproach or shame" (pp. 183-184). The author's stratagems, adds Holt (1961), "enable us to obtain vicariously the deeper pleasure of daydreaming" (p. 21).

The effortlessness of ludic reading is well accounted for by analogy to Klinger's (1971) suggestion that fantasy segments are linked in a respondent chain, "elicited rather than emitted, controlled by antecedent events rather than rein-

forcements at their termination, and entail relatively little sense of effort" (p. 351).

However, reading is not dreaming: The reader's volitional ability is unimpaired, and both the formal characteristics of primary process thought (Rapaport, 1951) and the four mechanisms of the dream-work (condensation, displacement, representability, and secondary elaboration: Freud, 1900/1968) are absent. Unlike dreams, which may become so threatening that they lead to depersonalization (Shapiro, 1978), readers terminate book fantasy by lifting their eyes from the page, at which the book ceases to exist. In this sense, unlike real dreaming, reading guarantees the dreams of power and invulnerability every reader would most like to have.

Hypnosis

Hypnosis offers more useful parallels with reading trance. In both hypnosis and reading, the subject maintains a continued, limited awareness that what is perceived as real is in some sense not real (Hilgard, 1979): The entranced reader, however deep the involvement, never feels threatened by book material in the way that the dreamer is threatened by a nightmare (Fromm, 1977). Moreover, hypnotic trance (like reading trance) is mediated by intense, focused attention "during which the available representational apparatus seems to be entirely dedicated to experiencing and modeling the attentional object," write Tellegen and Atkinson (1974, p. 274). They argue that this attentional state has three major manifestations, each of which parallels aspects of reading trance. The first is a heightened sense of the reality of the attentional object; the second is that the full commitment of attention renders the subject impervious to distraction; and the third is that the vivid subjective reality experienced during episodes of absorbed attention has the effect of transfiguring both the observer and the attentional object, which acquires "an importance and intimacy normally reserved for the self" (p. 275). This formulation suggests parallels between the ludic reader's absorption and the *otherness* of alternate states of consciousness (Zinberg, 1977), as in Huxley's account of

a flower arrangement seen under the influence of mescaline:

> I was not looking now at an unusual flower arrangement. I was seeing what Adam had seen on the morning of his creation—the miracle, moment by moment, of naked existence . . . a bunch of flowers shining with their own inner light and all but quivering under the pressure of the significance with which they were charged (1954/1960, p. 17).

Finally, relating trance to personality structure, Tellegen and Atkinson argue that the *state* of intensely focused attention arises from an absorption *trait*, of which the motivational component is "a desire and a readiness for object relationships, temporary or lasting, that permit experiences of deep involvement" (p. 275). Individual variations among readers are thus accommodated, because all who can read well enough will experience absorption, but not all readers will have the "desire and readiness" for the reality-changing experience of total attentional commitment.

Imagery in ludic reading

Is vivid imagery a prerequisite for ludic reading? There are some indications that it is, such as the correlation that has been found between a subject's lack of vivid imagery and insusceptibility to hypnosis (Hilgard, 1979; Perry, 1973), suggesting that nonimaging readers are unlikely to be involved readers. Also, sinking through the page into the world of the book might be difficult if the world into which one is sinking is misty and ill-defined. On the other hand, consciousness is not a picture gallery (Huey, 1908), and characters in fiction are "mostly empty canvas" (Gass, 1972, p. 45). The issue is clarified by Kosslyn's (1981) *parallel race* theory of imagery, which suggests that well-practiced propositional material is accessed more rapidly and more easily than imaginal material. Accordingly, imagery would only be used when propositional information was lacking, as for example in answering the question "Are a hamster's ears round or pointed?" Because images are short-term memory structures, fade rapidly, and are difficult to maintain

(Kosslyn, 1981), it seems that image look-up will seldom form part of ludic reading, which is response-free and often of highly stereotyped and overlearned materials, and therefore readily accessible in propositional form.

The uses of reading

Readers may use the absolute control over fantasy processes ludic reading gives them in order to dull consciousness or to heighten it. A person's current concerns potentiate fantasy content (Klinger, 1971), so that ongoing day-dreams may reflect recent triumphs, anticipated disasters, or incapacitating anxieties. Singer's (1976) factor-analytic study of daydreaming types indicates that the concerns which color fantasy are moderately stable, which in turn suggests that a ludic reader's current concerns may determine the use he or she characteristically makes of reading (though these boundaries between types of reader are permeable and changeable). Thus, readers with negatively toned current concerns, analogous to the day-dreaming types Singer (1976) identified as anxious-distractible and guilty, may be especially threatened by periods of empty consciousness during which fantasy colored by fears and anxieties may develop (Blum & Green, 1978). They may fortify themselves against this threat by carrying a book with them wherever they go, taking absurdly large quantities of books with them on vacation, and organizing their lives to allow for a great deal of consciousness-controlling busyness.

Readers with pleasantly toned current concerns, and fantasy that recycles enjoyable experiences, are on the contrary likely to use reading as a consciousness-heightening activity, for example by self-exploration through awakened memories and aspirations, or by deep involvement with the book's characters and situations (Hilgard, 1979). In line with Hilgard's (1979) findings, it seems likely that such involved readers would have higher hypnotic susceptibility than those who use reading to block self-awareness.

Thus, the first hypothesis that emerges from the literature and from the findings of the previous studies is that the self-reports of ludic readers about their lifestyles and their reading habits will reflect the use of reading (though not necessarily any awareness of such use) as either a block to self-awareness or an enhancer of it. A second hypothesis is that ludic readers will prize ludic reading's effortlessness, and the control they are able to exercise over the pace of their reading (as shown by Study 2), over its content, and over its safety. (One reason for reading's safety is that readers have learned to avoid reading matter that touches on non-neutralized personal concerns.) Third, it is hypothesized that readers will report greater use of propositional than of imaginal strategies during ludic reading.

Method

Subjects

Subjects were the 33 ludic readers described in Study 2. Four especially articulate members of this group, to whom fictitious names have been given, were invited to participate in a group discussion about the reading experience. They were Ockert Olivier, 45, a clerk (Subject 119); his daughter Sanette, 19, also doing clerical work (Subject 206); Mary, 35, a businesswoman (Subject 230); and Wendy, 52, a university lecturer in library science (Subject 215). Two other members of the Olivier family – the wife and an elder daughter – also participated as subjects, and each member of this extraordinary group reads a great deal: Ockert (whose laboratory reading speed was 350 WPM) claimed 30 books a month; his wife (316 WPM), 25 a month; Sanette (465 WPM), 18 a month; and her elder sister (921 WPM) said she reads 28 books a month. In the intake interview, the sister remarked that their home is bursting with books, and when you step through the door, "it's as if a reading fever suddenly grabs hold of you." This virus has deliberately been propagated by the parents, who have socialized their children to become heavy readers.

Mary claims that she reads 25 books a month, works 13 hours a day, is in bed by 8, and reads for 2 hours before falling asleep. Weekends, she brings home 6 feature-length

movies and 4 shorts, which she watches on Saturdays and Sundays with her two young children. Her holiday routine takes in 3 feature movies a day and some window shopping. Wendy, by contrast, says she reads only 4 or 5 books a month and often becomes deeply involved in her reading.

Materials

Items in the Reading Habits Questionnaire (described in Study 1) and the Reading Mood Questionnaire (Study 2), together with the transcribed 2-hour tape recording of the group discussion about reading, yielded the thematic and quantitative data reviewed below.

In order to determine whether persons who read a great deal for pleasure deviate as a group from population norms on commonly measured dimensions of personality, I administered two inventories: the **Sixteen Personality Factor Questionnaire (16PF**: Cattell, Eber, & Tatsuoka, 1970), and the **Eysenck Personality Inventory (EPI**: Eysenck & Eysenck, 1964). For the 16PF, well-validated South African norms are available, but not for the EPI, for which the British norms provided by Eysenck and Eysenck (1964) were used.

Results and Discussion

The thematic ordering of the self-report material in the following eight sections allows the hypotheses about readers' needs and gratifications to be evaluated. It is also useful because self-reports by introspective ludic readers are rare in the research literature (Hilgard, 1979, is a notable exception).

Reading ability and reading gluttony

You have to be able to read well in order to enjoy Louis L'Amour, argues Ockert, and to those who say it's not good reading matter, he replies that they probably can't read well enough to enjoy it, that they are still at the stage of decoding letter-by-letter like children in school. The mark of the absorbed reader who is really enjoying reading is that awareness of the

mechanics of reading drops away: "You get the feeling you're not reading any more, you're not reading sentences, it's as if you are completely living inside the situation." Central to Ockert's interest in reading well is his need to read fast so that he can forget fast. During the intake interview, he remarked,

> The more I enjoy a book, the quicker I want to forget it so that I can read it again. Like *Fallon* [Louis L'Amour], for example: I've already read it 10 times, and I enjoy it almost exactly the same each time. I read it as quickly as I can, just to get the story. Some people can tell you exactly what they read a year or two years later. I try to forget because there are so few books that really give you the pleasure of reading.

Ockert is the model for a gluttonous reader, a text gobbler who swallows books whole, achieving that pinnacle of gluttonous security, the ability to eat the same dish endlessly, passing it through his system whole and miraculously wholesome, ready to be re-eaten again and again. The myth of the cornucopia, the inexhaustible horn of plenty which Zeus presented to Amalthea, is here literally achieved: The book is an endless supply of nourishment.

Control

In response to an item in the Reading Mood Questionnaire about books and movies, Ockert writes,

> I can read a book at my own pace; I can put it down whenever I like, and I can always go back to it. A movie can't be switched off—same with TV—but perhaps the most important of all, I can't replay the enjoyable parts, or see it at my pace.

Responding to the same question, his elder daughter (Subject 220) writes,

> I find a totally different type of enjoyment from books than from movies. . . . I savor the context of the book and can always go back and read it again, which you can't do with movies or TV programs.

And subject 101 responds,

I don't really enjoy movies—I feel I'm a captive audience; if I get bored I feel compelled to stay to the end, as I've paid. . . . The books one reads provide a pleasure that is entirely at one's beck-and-call. You read, stop . . . as the mood takes you.

Escapism

In responding to questionnaire items about reading pleasure, many subjects wrote about escapism (which, in turn, is often synonymous with the blocking of self-awareness). Some of these responses have a quality of pathos, describing a blighted life in which reading is an island of delight.

Reading removes me for a considerable time from the petty and seemingly unrewarding irritations of living: I did not choose to be born, and cannot say (in all honesty) that I get 100% enjoyment from life. So, for the few hours a day I read "trash," I escape the cares of those around me, as well as escaping my own cares and dissatisfactions. This is a selfish attitude, which I can justify only by saying that it contributes in no small measure to preserving what sanity I have. I'm not so sure, then, that I read for "reward" as much as for "escape" (Subject 101).

Sanette, too, writes that what one wants of the book world is not an extension of one's own, but a world that is nonthreatening because it is quite different.

A love story is so near real life. When I want to escape, I don't want to escape into the same world again . . . I want to escape into a fiction world, a world that was.

For Sanette and her family, the question of whether the world is passing them by or, on the contrary, passing by everyone else is an unresolved and painful issue. At intake, Ockert said that his family's reading is "a kind of disease. . . . Life passes us by." In the group discussion, however, he took the view that the life that does pass him by is not worth living:

Like Mary said about her husband, I can't imagine how people keep themselves busy fishing and so on every weekend in a little world 60

miles around their homes. That's all his world consists of. He can get no escapism . . . he's just busy with himself all day. If I had to be occupied with myself all day I'd go mad, crazy. I'd say our reading is like Sigmund Freud said, "Dreams are the means whereby we compensate for the harshness of reality." You can say "reading" instead of "dreams."

Of the ludic readers, 29 replied to the **Frustration Index** question about discovering, in a strange hotel, that one had nothing to read (reported in Study 1). Of the 29, 12 felt mild emotion, using adverbs such as "frustrated," "restless," or "annoyed," and 9 were angry or disappointed. But the other 8 readers described intense emotion, using terms such as "desolate," "dispossessed," "lost and miserable," or "desperate," which bring to mind the description Bowlby (1973) offers of the separation anxiety of early childhood. One may speculate that these terms reflect the intensity of the need some readers feel to escape from rumination to reading, and the desperation they feel when this need is frustrated.

Affect and fear control

Reading can move attentional focus from self to environment (Carver & Scheier, 1981), thus changing the content of consciousness and mediating mood changes. Subject 221 writes,

I often feel sorry for myself and a book can change my mood very quickly . . . . Books make me happy, books make me cry—after a good cry I feel a new person.

For many subjects, fear is an especially salient emotion, and one of the principal uses of ludic reading is to master fear by delicately controlling it, so that the reader experiences the gooseflesh of fear but not its terror. Sanette uses a double-reading technique—first a quick preview and then a slower rereading—to make sure nothing will go "bump" on the page and startle her: "Suddenly the horse comes upon him and he sees the other man. . . . I always go back because then I know what to expect." Both she and her father take a theatrical delight in describing how well they control their fear. Sanette says,

When I was small . . . I read an Afrikaans book about werewolves and I was so frightened I had to go and sit right next to my dad. I was scared to death, especially when I read it at night.

But so delightful was the fear, so well-managed by the father's solid presence, that she reread the werewolf story three or four times! To neutralize movies, Mary practices a variant of Sanette's double-reading technique: Before seeing *Cassandra Crossing*, she first "very quickly" read the book "just to get an idea of who was going to die when, so I could keep my eyes open."

Reading-induced affect becomes unpleasant when it touches on non-neutralized current or childhood concerns. Thus, love stories are painfully real for Sanette, who is a lonely adolescent. Mary's sensitivity is to child maltreatment: "I can take a murder story with 10 dead bodies, but don't have a child involved—then I've had it." Thus, reading Dickens as a child, she wept so copiously that her mother took the book away from her "because I was a nervous wreck." Dickens remains "just too horrible" because "there are people who treat children like that today."

Psychodynamically, it is an interesting distinction Sanette and Mary make between strong emotions they enjoy ("a good cry," "I was scared to death") and those that flood them with unmanageable affect. Because all subjects who recalled overwhelming reading experiences related these to the distant past and not to recent reading, it is possible that learning to avoid such material took place through one-trial conditioning.

Reading in bed

For most subjects, taking a book to bed is a distillation of the delights of reading, and little of the guilt that may accompany reading at other times attaches to bedtime reading. It is a private time, and, like play, it stands outside ordinary life. For many readers, bedtime reading is a kind of addiction. Thus Wendy: "Even if I read for only 5 minutes, I must do it—a compulsion like that of a drug addict!" Similarly, Subject 111: "My addiction to reading is such I almost can't sleep without a minimum of 10 minutes (usually 30–60 minutes) of reading." It

is comfortable and soporific, remarks Subject 226: One is already undressed and need only switch off the light when reading ends. A recurrent theme among ludic readers is the power of bedtime reading to shut out the day's activities and problems and to induce the relaxation essential for sleep. Reading in bed "takes my mind away from the day's tension and sends me to sleep" (Subject 223), and this theme returns in virtually the same words in at least 8 other protocols. The quantitative data support the importance of bedtime reading: Of 26 respondents, 13 said they read in bed "every night" or "always," and 11 said "almost every night" or "most nights."

Old friends

Pilot study interviews with ludic readers indicated that rereading well-liked and well-known books was an important part of their reading enjoyment. Two said they kept a pile of these old friends on their bedside table, and turned to them in the minutes before falling asleep.

However, data from the main study indicate that **rereading** is the exception rather than the rule: 16 readers reported that rereading is 5% or less of their monthly reading, and 9 of these specify 2% or less. The group mean of 9.96% ($SD = 16.29\%$) is substantially exceeded by only 2 readers, who reported 50% and 25% rereading, respectively.

Visualization

Though the research literature suggests that ludic readers are more likely to use propositional than imaginal strategies (Kosslyn, 1981; Nell, in press), readers' self-reports indicate that the reverse may be true. For example, discussing *The Poseidon Adventure* (about a ship turned topsy-turvy in a wreck), Mary, a poor visualizer (as determined by scores on three imaging tasks), remarked that she had to see the movie before she was able to make much sense out of the descriptions in the book. Ockert, a vivid imager, says, "Do you know how I read that book? You'll be amazed. In the end, I lay down on my back in the middle of the floor to

get my thoughts right, to get my images right, so I could see what was going on." Sanette recalls that she put the book down in order to find a picture of a flight of stairs, which she then turned upside down and referred to as she was reading.

These rather desperate remedies suggest that the detailed scene-setting in *The Poseidon Adventure* may have imposed undue demands on these readers, who might have been happier with less description. Indeed, Sanette had remarked earlier that Louis L'Amour is a great writer because he does not tell us that the hero is riding through a dense forest and then give descriptions of the birds flying from branch to branch and so on, but writes simply, "Sackett was riding through the forest," so that the reader may make of this whatever image he or she chooses. She goes on to explain that with Westerns, because they are set in a landscape she has come to know well, it is the work of a moment to see Indians rising up on the horizon, or horsemen storming into a camp, and one does not need the author to do this work for you—indeed, if he or she does, it is unwelcome.

Imagery vividness, as rated by readers in self-reports, correlated at .35 ($p < .05$) with the variability scores for muscle activity at the corner of the mouth (EMG2), raising interesting questions about the role of facial expressions in imaginal activity. Vividness of imagery also correlated .47 ($p < .001$) with variability scores for reading involvement, and correlated at a value that approached significance ($p < .10$) with activity of the forehead frontalis muscle (EMG1). These results, taken together with the self-report data reviewed above, indicate that imagery may be an important contributor to reading pleasure.

Attentional effort

A question in the prelaboratory Reading Mood Questionnaire (Study 2) asked subjects to rate a number of well-remembered books for **concentration effort**, from 0% ("you concentrated effortlessly") to 100% ("you had to force yourself to concentrate as hard as you could"). Mean effort for the 25 subjects who answered

this question was 5.4% ($SD = 9.0$) for the most-enjoyed recent book, 26.8% ($SD = 40.7$) for a book read with enjoyment but under distracting circumstances, 39.6% ($SD = 51.5$) for a recently read work book, and 67.2% ($SD = 78.6$) for failed pleasure reading ("a book you found thoroughly dull, flat, and uninteresting, but that you nonetheless read quite a chunk of").

As shown by the low standard deviation (9.0), readers were virtually unanimous in rating concentration effort during ordinary ludic reading at near zero; however, as Study 4 shows, what is subjectively experienced as effortlessness is substantially aroused. It is also striking that reading enjoyment is compatible with considerable concentration effort. Finally, it should be noted that routine work reading is perceived as substantially less effortful than failed ludic reading, though the high standard deviations around these means require caution in interpretation.

Personality attributes of ludic readers

Do people who read a great deal for pleasure share personality traits that distinguish them as a group? Application of the **Eysenck Personality Inventory** and the **Cattell Sixteen Personality Factor Questionnaire** to the 33 ludic readers showed them to be introverts, with scores strikingly below the British norm on the EPI Extraversion Scale, reflecting negative answers to questions such as "Do you often long for excitement?" or "Would you do almost anything for a dare?" This finding is confirmed by loadings on three of the five 16PF scales (F−, M+, and Q$_2$+) associated with the second-order introversion factor. The strategies introverts use to reduce incoming stimulation (preferring their own company or that of old friends and the familiar to the novel: Gale, 1981, p. 184) have a good fit with the possible uses of formulaic fiction to give the reader dominion over exceedingly familiar landscapes. Thus, it is possible that avid readers prefer reading to doing because, as introverts, they feel safer with the familiar and the readily controlled than among the unpredictable arousal events of the real world.

CONCLUSION

This paper has examined some of the psychological mechanisms that take skilled readers out of themselves, and lead them, absorbed or entranced, into the world of the book: Books are the most ubiquitous, portable, and often the most potent of the means the entertainment industry provides for consciousness change. The processes of reading gratification begin with the subjectively effortless extraction of meaning from the printed page (Study 1), the rewards of which appear to be augmented by flexible control of reading pace (Study 2). The harsh judgments elite criticism has made of pleasure reading interact with text difficulty and reader preferences to determine the reader's selection of a ludic vehicle (Study 3). Fluctuating physiological arousal (Study 4) and cognitive consciousness-change mechanisms (Study 5) combine to confer on the skilled reader the sovereignty of the reading experience through which, with striking economy of means and precision of outcome, readers transform fear to power, gloom to delight, and agitation to tranquillity.

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Footnote

APPENDIXES

Appendix A   Extract sources in author sequence

Code No.	Source
14	Austen, Jane. (1813/1973). *Pride and Prejudice.* London: Collins.
66	Barnes, Djuna. (1936/1963). *Nightwood.* London: Faber & Faber.
49	Bellow, Saul. (1961/1965). *Herzog.* London: Weidenfeld & Nicholson.
30	Christie, Agatha. (1939/1968). *Ten Little Indians* [American title]. London: Collins.
76	Conrad, Joseph. (1900/1955). *Lord Jim.* London: Dent.
20	Dickens, Charles. (1937/1964). *Pickwick Papers.* New York: Dell.
63	Fessler, Loren. (1963/1968). *China.* New York: Time-Life.
86	Fleming, Ian. (1961). *Thunderball.* London: Jonathan Cape.
36	Gordon, Richard. (1954/1955). *The Captain's Table.* London: Michael Joseph.
53	Gough, Harrison G. (1969). A Leadership Index on the California Psychological Inventory. *Journal of Counselling Psychology, 16,* 283-289.
83	*Gray's Anatomy: Descriptive and Applied.* (1858/1958). London: Longman.
44	Greene, Graham. (1940/1962). *The Power and the Glory.* Harmondsworth: Penguin.
55/85	Hailey, Arthur. (1975). *The Moneychangers.* London: Michael Joseph.
46	James, Henry. (1881/1936). *The Portrait of a Lady.* Harmondsworth: Penguin.
22	Joyce, James. (1916/1954). *A Portrait of the Artist as a Young Man.* London: Jonathan Cape.
38	L'Amour, Louis. (1967). *The Skyliners.* London: Transworld.
13	Lyall, Gavin. (1965/1973). *Midnight Plus One.* London: Pan.
52	Maugham, W. Somerset. (1928/1967). *Ashenden, or The British Agent.* London: Heinemann.
11	Melville, Herman. (1851/1952). *Moby Dick, or The Whale.* London: MacDonald.
71	Michener, James A. (1959/1964). *Hawaii.* London: Corgi.
17	Moore, Franklin G. (1951/1959). *Production Control.* Tokyo: McGraw-Hill.
51	O'Donnel, Peter. (1971/1975). *The Impossible Virgin.* London: Pan Books.
77	Ogilvie, David. (1963/1964). *Confessions of an Advertising Man.* New York: Dell.
29	Rand, Ayn. (1957). *Atlas Shrugged.* New York: Random House.
16	Robins, Denise. (1974). *Dark Corridor.* London: Hodder & Stoughton.
23	Rotenstreich, Nathan. *Between Past and Present: An Essay on History.* New Haven: Yale.
98	Smith, Wilbur. (1974). *Eagle in the Sky.* London: Heinemann.
62	Summers, Essie. (1965). *Sweet Are the Ways.* London: Mills & Boon.
43	Thompson, Hunter S. (1966/1975). The Hell's Angels, a Strange and Terrible Saga. In Tom Wolfe and E.W. Johnson (Eds.), *The New Journalism.* London: Picador.

Appendix B   Sample Extracts

Extract 98.   Mean student rank: 1
              Wilbur Smith, *Eagle in the Sky*

They piled the luggage into the Mustang and the girl's companion folded up his long legs and piled into the back seat. His name was Joseph — but David was advised by the girl to call him Joe. She was Debra, and surnames didn't seem important at that stage. She sat in the seat beside David, with her knees pressed together primly and her hands in her lap. With one sweeping glance, she assessed the Mustang and its contents. David watched her check the expensive luggage, the Nikon camera and Zeiss binoculars in the glove compartment and the cashmere jacket thrown over the seat. Then she glanced sideways at him, seeming to notice for the first time the raw silk shirt with the slim gold Piaget under the cuff.

"Blessed are the poor," she murmured, "but still it must be pleasant to be rich."

David enjoyed that. He wanted her to be impressed, he wanted her to make a few comparisons between himself and the big muscular buck in the back seat.

"Let's go to Barcelona," he laughed.

David drove quietly through the outskirts of the town, and

Extract 76.   Mean student rank: 15
              Joseph Conrad, *Lord Jim*

She told me, "I didn't want to die weeping." I thought I had not heard aright.

"You did not want to die weeping?" I repeated after her. "Like my mother," she added readily. The outlines of her white shape did not stir in the least. "My mother had wept bitterly before she died," she explained. An inconceivable calmness seemed to have risen from the ground around us, imperceptibly, like the still rise of a flood in the night, obliterating the familiar landmarks of emotions. There came upon me, as though I had felt myself losing my footing in the midst of waters, a sudden dread, the dread of the unknown depths. She went on explaining that, during the last moments, being alone with her mother, she had to leave the side of the couch to go and set her back against the door, in order to keep Cornelius out. He desired to get in, and kept on drumming with both fists, only desisting now and again to shout huskily: "Let me in! Let me in! Let me in!" In a far corner upon a few mats the moribund woman, already speechless and unable to lift her arm, rolled her head over, and with a feeble movement of her hand seemed to command — "No! No!" and the obedient daughter, setting her shoulders with all her strength against the

Extract 23.   Mean student rank: 30
              Nathan Rotenstreich, *Between Past and Present: An Essay on History*

The problematic nature of the validity of empirical knowledge is inherent in the fact that concepts render validity to a knowledge which is a synthesis of both concepts and percepts. The problematic nature of empirical knowledge lies therefore in the very fact that it is an *empirical* knowledge. It lies in the nature of the contact of the elements and in the impossibility of deducing one of the elements from the other, or of justifying the contact of them through some third element outside both. The problematic nature of this kind of knowledge lies in the fact that this knowledge which *demands validity* is based on a contact which in itself is *not validated.* Here the difference between mathematical and empirical knowledge becomes apparent. In mathematical knowledge the very fact that the object is constructed by thought guarantees the validity of that object, since validity is a feature of thought as such; in empirical knowledge it is thought which extends validity to a synthesis of both thought and percept.

Critical philosophy is based on the assumption that although the material or the percept is an indispensable element of valid knowledge, it is not *this* element which makes knowledge valid.