

Wissenschaftliche Arbeiten

Aufbau eines Zeitschriftenartikels

Wie lese ich einen Forschungsartikel?

Dienes, Z., Broadbent, D. & Berry, D. (1991). Implicit and Explicit Knowledge Bases in Artificial Grammar Learning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 17(5), 875-887.

Lesen von Forschungsartikeln

1

Implicit and Explicit Knowledge Bases in Artificial Grammar Learning

Zoltan Dienes, Donald Broadbent, and Dianne Berry
University of Oxford, Oxford, England

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Several authors have argued that people can learn complex tasks according to distinct implicit and explicit learning modes (e.g., Reber & Broadbent, 1984, 1988; Reber, 1967, 1989). The modes are distinguished both by the conditions that elicit them and by the type of knowledge that they result in. Implicit rather than explicit learning is claimed to occur, especially under incidental conditions and when the crucial information is nonverbal, purportedly, the resulting implicit but not explicit knowledge is largely unconscious or nonverbalizable (see, e.g., Reber, 1989).

One paradigm that has been used extensively to investigate the acquisition of implicit knowledge is artificial grammar learning (e.g., Mathews, Bus, Stanley, Blanchard-Fields, Cho, & DeGhan, 1989; Reber, 1967, 1976, 1989; Reber & Allen, 1978; Reber & Lewis, 1977). In this paradigm, subjects typically memorize strings of letters that appear arbitrary but are

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Previous researchers have investigated the first claim—that the knowledge is unconscious—by using a task regarded as measuring explicit knowledge can elicit the knowledge used for classification performance. Free report is clearly a measure

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Titelseite:

Auf der Titelseite findet man die wichtigsten Angaben zum Artikel.

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Aufbau des Artikels
1) Abstract

Der Abstract liefert eine Kurzzusammenfassung des Artikels. Durch Lesen des Abstracts kann man in der Regel bereits ganz gut einschätzen, ob der Artikel für die eigene Fragestellung relevant ist.

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Aufbau des Artikels
1) Abstract
2) Einleitung/Theoretischer Teil

Beginn des Artikels; kurzer Überblick über das Thema, Abriß über bisherige Forschung und Theorien, theoretische Herleitung der eigenen Fragestellung
⇒ was untersuche ich?
⇒ wie untersuche ich es?
⇒ warum untersuche ich es so?

Materials and apparatus. The grammar used was the one used by Dulany et al. (1984), Perruchet and Pacteau (1990), and Reber and Allen (1978) (see Figure 1). The 20 grammatical acquisition exemplars and the 50 grammatical and nongrammatical test exemplars were the ones used by Dulany et al. (1984) and Perruchet and Pacteau (1990; Experiments 1 and 3) (see Table 1). Twenty nongrammatical acquisition exemplars were created, also shown in Table 1. Five were taken from the nongrammatical test exemplars, and the remaining 15 were made by substituting an inappropriate for an appropriate letter in an otherwise grammatical string. The position of violation covered letter positions one to six over the 15 exemplars.

During the acquisition phase, each exemplar was displayed on a color monitor by a Sinclair ZX Spectrum for 5 s, and the total set of exemplars was presented six times in a different random order each time. Randomization was constrained to avoid making the grammar salient. For the grammatical group, only the 20 grammatical acquisition exemplars were displayed. For the mixed group, all 40 acquisition exemplars were displayed. The grammatical items were displayed in black, and the nongrammatical exemplars were displayed in red: grammatical and nongrammatical exemplars alternated.

Wissenschaftliche Arbeiten schriftenartikels

Aufbau des Artikels

- 1) Abstract
- 2) Einleitung/ Theoretischer Teil
- 3) Methode

Beschreibung der Stichprobe, des verwendeten Materials und der durchgeführten Untersuchung für jede Untersuchung.

Subjects. The subjects were 40 paid volunteers, aged between 18 and 35, from the Oxford University subject panel.

Experiment 1

Method. The subjects were 40 paid volunteers, aged between 18 and 35, from the Oxford University subject panel. Design. Subjects were randomly allocated to one of two groups: (a) the grammatical group that saw only grammatical exemplars or (b) the mixed group that saw both grammatical and nongrammatical exemplars.

Lesen von Forschungsartikeln

Table 2
Consistency of Judgments

Judgment	Gramm.		Mixed		Dulany et al. ^a
	M	SD	M	SD	
CC	0.50	0.08	0.44	0.08	0.47
EC	0.14	0.06	0.17	0.06	0.14
CE	0.16	0.05	0.16	0.06	0.18
AV	0.15	0.04	0.16	0.04	0.16
EE	0.21	0.08	0.23	0.06	0.21

Note. CC = correct-correct; EC = error-correct; CE = correct-error; EE = error-error; AV = mixed cases; Gramm. = grammatical.
^a The means for Dulany et al. (1984) are for the implicit-sequential group.

and gave a confidence rating on a 5-point scale on which 1 indicated a guess and 5 indicated certainty.

Results. Classification performance. The proportions of items judged correctly by the grammatical and mixed groups were .65 (SE = .02) and .60 (SE = .01), respectively. The groups differed significantly, $F(1, 38) = 2.35, p < .05$. These proportions are comparable to the proportion correct that was obtained by Dulany et al. (1984) (.63 for the implicit-sequential group). For the two presentations of each exemplar, the mean proportions of judgments that were correct-correct (CC), error-correct (EC), correct-error (CE), error-error (EE), and the average of the two mixed cases (AV) are displayed in Table 2.

A 2 x 2 (Group [grammatical vs. mixed] x Error Type [E vs. AV]) mixed-model analysis of variance (ANOVA) indicated significant main effects of group, $F(1, 38) = 4.35, p < .05$, and of error type, $F(1, 38) = 18.74, p < .001$. That is, the mixed rather than the grammatical group made a greater number of both error types. Also, subjects made more error-error than mixed error types, as found by Dulany et al. (1984). SLD test. The proportions of correct responses to the SLD test by the grammatical and mixed groups were .64 (SE = .02) and .60 (SE = .01), respectively. The difference be-

Wissenschaftliche Arbeiten schriftenartikels

Aufbau des Artikels

- 1) Abstract
- 2) Einleitung/ Theoretischer Teil
- 3) Methode
- 4) Ergebnisse

Darstellung der Untersuchungsergebnisse in Text, Tabelle und/oder Grafik.

Lesen von Forschungsartikeln

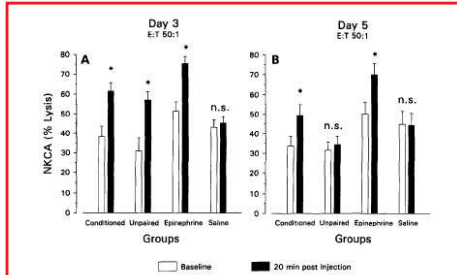


Fig. 1. Natural killer cell activity (% lysis) obtained on day three (acquisition) and on day five (testing) 10 minutes before (baseline) and 20 minutes after epinephrine/saline injection in all experimental groups ($p < 0.01$).

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Lesen von Forschungsartikeln

Discussion. The aim of Experiment 2 was to investigate the possibility of different modes of learning and different types of knowledge in artificial grammar learning by systematically exploring the influence of concurrent random number generation. Experiment 2 provided data relevant to the influence of different task priorities under dual-task conditions and to the influence of performing under dual- versus single-task conditions. Experiment 2 also allowed an attempted replication of the important findings of Experiment 1; this last issue will be dealt with first.

As in Experiment 1, the results of Experiment 2 indicated a correspondence between classification performance and ability to answer the SLD test. There was a significant correlation between classification performance and correct responses on the SLD test. The d 's for the two tasks were similar. Further, there was a close match between classification performance and predicted performance that was based on answers to the SLD test, using a linear transformation. Also, there was a close matching of average PPSUM and classification performance across groups with different levels of classification performance. Because Experiment 2 used a different manipulation than Experiment 1 to influence classification performance, the close matching of classification performance and PPSUM in Experiment 2 considerably

General Discussion

This article reported two experiments that compared classification performance with a structured knowledge test—the

Wissenschaftliche Arbeiten Zeitschriftenartikels

Aufbau des Artikels

- 1) Abstract
- 2) Einleitung/ Theoretischer Teil
- 3) Methode
- 4) Ergebnisse
- 5) Diskussion

Interpretation und Einordnung der Ergebnisse, kritische Stellungnahme, Ausblick für jede Untersuchung.

Abschluß des Artikels bildet eine allgemeine Diskussion über alle Untersuchungen hinweg.
 ⇒ was habe ich herausgefunden?
 ⇒ was bedeutet es?
 ⇒ warum ist dieser Befund wichtig?

Lesen von Forschungsartikeln

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Wissenschaftliche Arbeiten

Zeitschriftenartikels

Aufbau des Artikels

- 1) Abstract
- 2) Einleitung/ Theoretischer Teil
- 3) Methode
- 4) Ergebnisse
- 5) Diskussion
- 6) Literatur

Angabe der verwendeten Literatur.
Autoren sind alphabetisch und
chronologisch geordnet.

Einführung - Wissenschaftliche Arbeiten

Aufbau eines Zeitschriftenartikels

Aufbau des Artikels

- 1) Abstract
- 2) Einleitung/ Theoretischer Teil
- 3) Methode
- 4) Ergebnisse
- 5) Diskussion
- 6) Literatur

Die blau markierten Artikelteile sind beim Lesen eines Artikels besonders relevant, da sie einen globalen Überblick und eine Einordnung der Untersuchung(en) geben. Methode und Ergebnisse hingegen liefern die genauen Details über den Ablauf der Untersuchung. Dies ist wichtig, um eventuelle methodische Mängel erkennen zu können oder die Untersuchung zu replizieren.