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## **Vorlesung Herbstsemester 2013**

## «Erziehung und Entwicklung»

Vorlesung vom 6. November 2013

Prof. Dr. Walter Herzog

Universität Bern Institut für Erziehungswissenschaft Abteilung Pädagogische Psychologie



## 5.3 Neuere Methoden der Kleinkindforschung

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## 5.3 Neuere Methoden der Kleinkindforschung

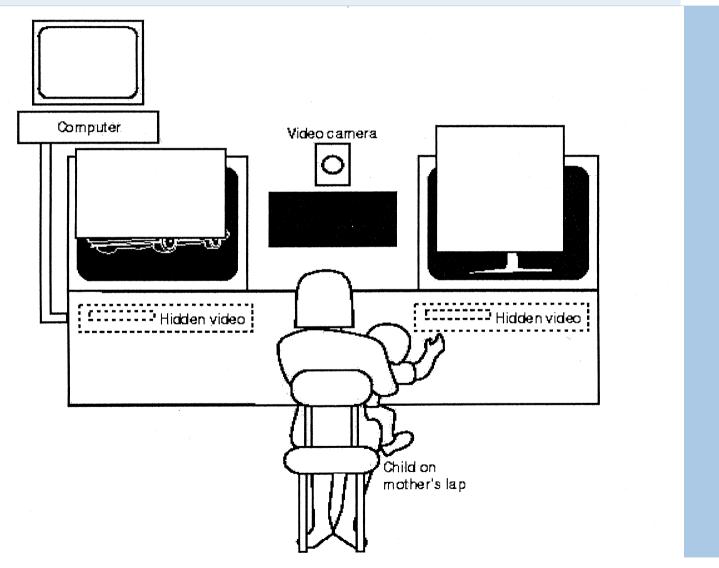


Figure 6. Preferential looking technique.



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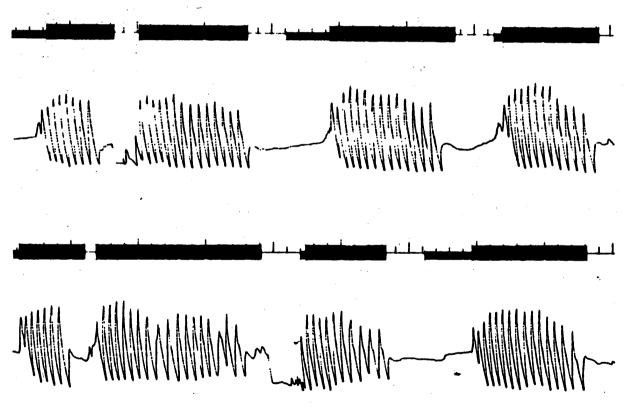
### 5.3 Neuere Methoden der Kleinkindforschung

Studie von DECASPER & SPENCE (1986)



### 5.3 Neuere Methoden der Kleinkindforschung

#### Studie von DECASPER & SPENCE (1986)



**Figure 1.** Polygraph record of a newborn's nonnutritive sucking. Wide horizontal marks indicate the onset and offset of a sucking burst. The time between the end of one burst and the beginning of the next denotes an interburst interval. Onset of the narrow event mark denotes that the time criterion, t seconds, has elapsed since the end of the last burst. Vertical lines indicate time in seconds.



### 5.3 Neuere Methoden der Kleinkindforschung

#### Studie von DECASPER & SPENCE (1986)

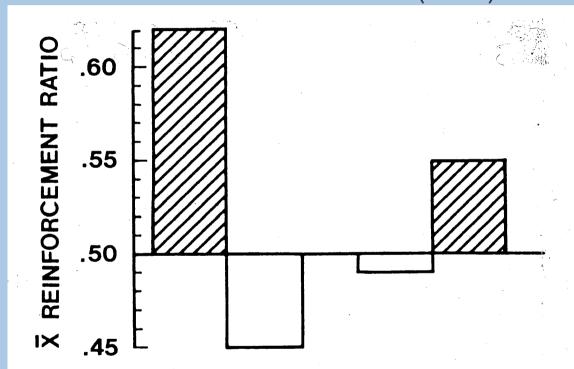
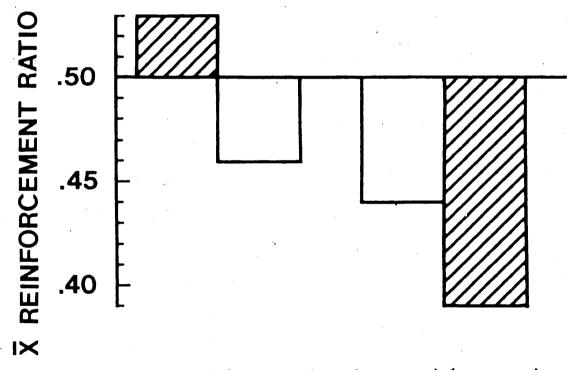


Figure 2. Mean reinforcement ratios of the target (hatched bars) and novel (open bars) stories for Experienced infants in the IBI < t condition (left side) and in the IBI > t condition (right side). The means are based on a total of 400 baseline and 1040 reinforced interburst intervals.



### 5.3 Neuere Methoden der Kleinkindforschung

#### Studie von DECASPER & SPENCE (1986)



(0t - .4t) (1t -1.4t) (0t - .4t) (1t -1.4t) IBI BIN (t-sec)

**Figure 3.** Mean reinforcement ratios of the target (hatched bars) and novel (open bars) stories for Control infants in the IBI < t condition (left side) and in the IBI > t condition (right side). The means are based on 300 baseline and 800 reinforced interburst intervals.



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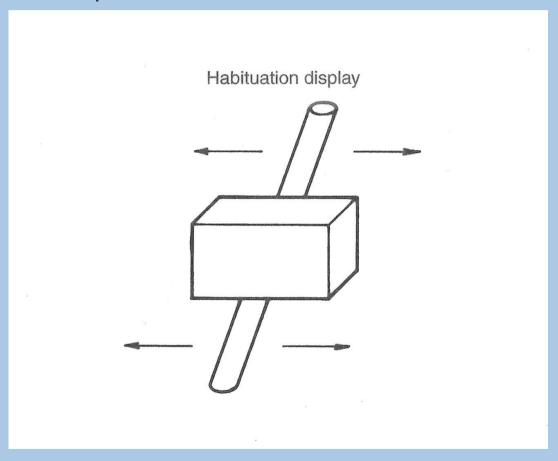




ELIZABETH S. SPELKE (\*1949)

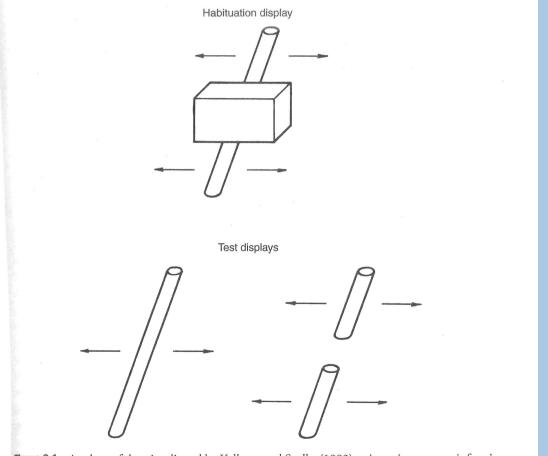


## 5.4 Ausgewählte Experimente





## 5.4 Ausgewählte Experimente



**Figure 6.1** A subset of the stimuli used by Kellman and Spelke (1983) to investigate young infants' perception of object unity.

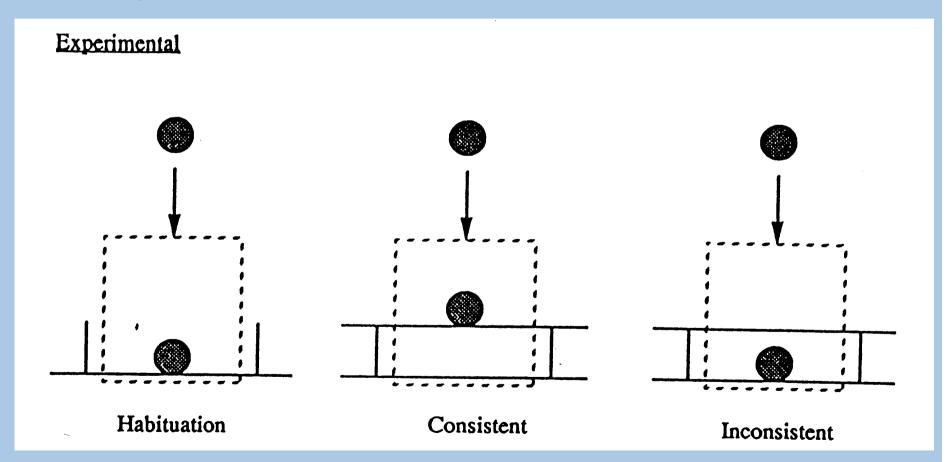
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## 5.4 Ausgewählte Experimente



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### 5.4 Ausgewählte Experimente

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#### 2. Beispiel

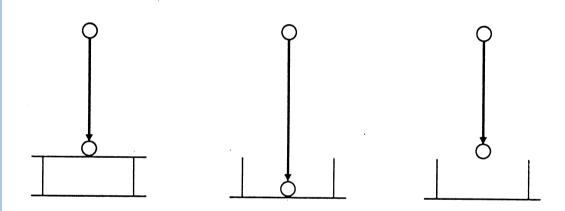


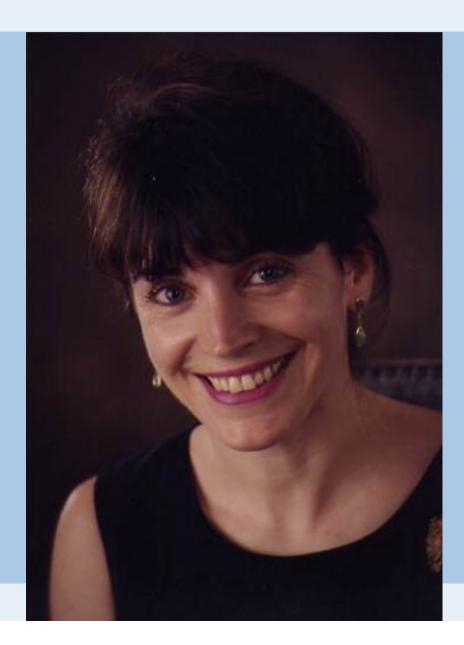
Figure 3.5

Principle of gravity and supporting surface. Left: habituation. Center: possible test event. Right: impossible test event. (From Spelke et al. 1992. Reprinted with permission of the authors. Copyright American Psychological Association.)



## 5.4 Ausgewählte Experimente

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RENÉE BAILLARGEON (\*1951)



## 5.4 Ausgewählte Experimente

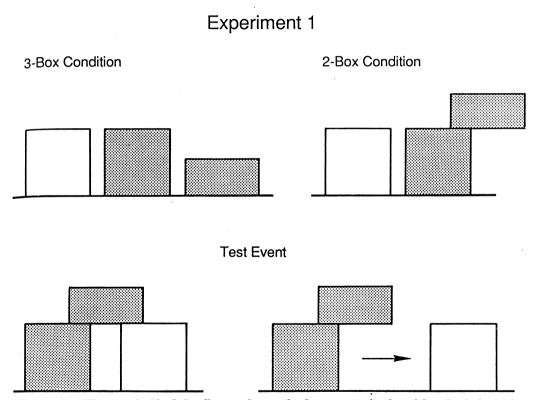


Figure 1. The top half of the figure shows the boxes manipulated by the infants in the three-box and two-box conditions in Experiment 1. The bottom half of the figure is a schematic representation of the test event presented to the infants in both conditions.



## 5.4 Ausgewählte Experimente

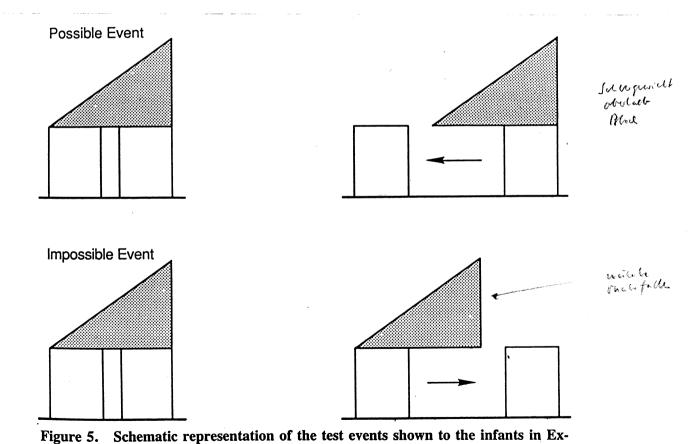


Figure 5. Schematic representation of the test events shown to the infants in Experiment 3.



## 5.4 Ausgewählte Experimente



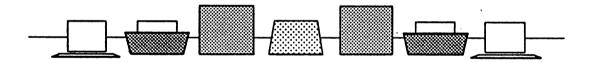
## 5.4 Ausgewählte Experimente

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#### 4. Beispiel

Figure 1. Schematic representation of the possible and impossible test events used in the principal experiment.

#### A. Possible Event



#### B. Impossible Event





## 5.4 Ausgewählte Experimente

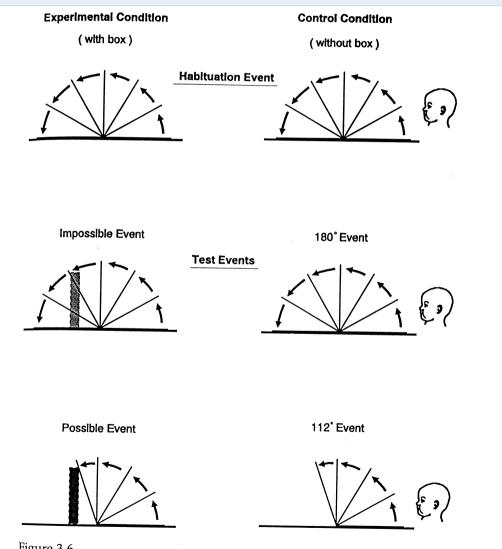
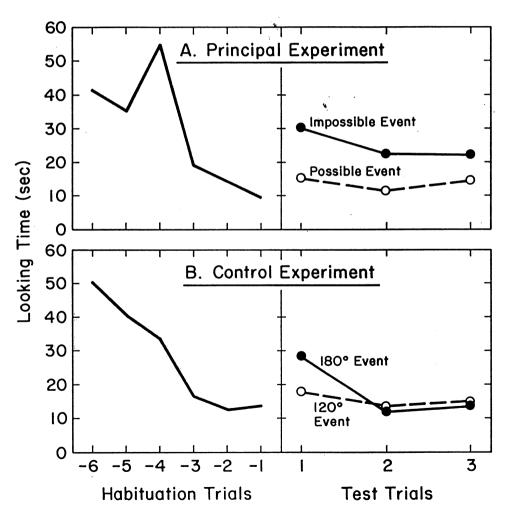


Figure 3.6
Principle of object persistence. (From Baillargéon 1986. Reprinted with permission of the author. Copyright American Psychological Association.)



## 5.4 Ausgewählte Experimente

Figure 3. Looking times of subjects in the principal and control experiments to the habituation and test trials.\*



<sup>\*</sup>The habituation trials are numbered backwards from the trial in which criterion was reached.

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## 5.4 Ausgewählte Experimente

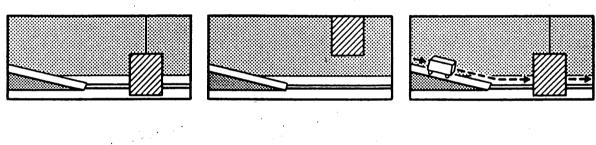


## 5.4 Ausgewählte Experimente

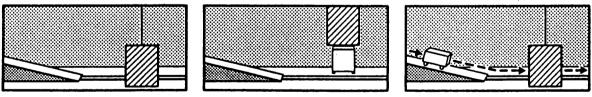
#### 5. Beispiel

Figure 1. Schematic representation of the habituation and test events used in Experiment 1: (A: top panel) Habituation event; (B: middle and bottom panels)

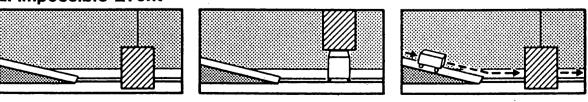
Test events.



#### 1. Possible Event

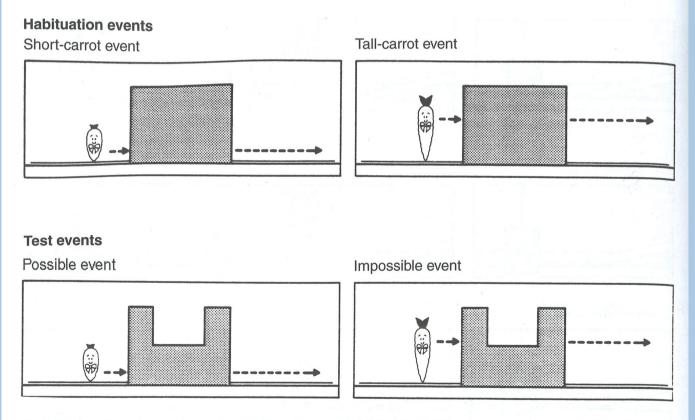


#### 2. Impossible Event





## 5.4 Ausgewählte Experimente



**Figure 6.6** The stimuli used by Baillargeon and DeVos (1991) to investigate how infants' knowledge of how the size of an object affects its visibility.



## 5.4 Ausgewählte Experimente

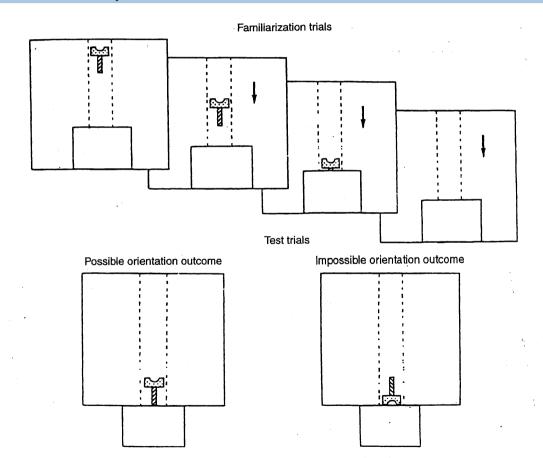


Figure 4.6 The displays used by Rochat and Hespos (1996) to investigate infants' awareness of how the trajectory of an object affects its final orientation. (Reprinted from *Cognitive Development, 11*, Rochat & Hespos, "Tracking and anticipation of invisible spatial transformations by 4- to 8-month-old infants," 3–17, copyright © 1996, with permission from Elsevier Science)

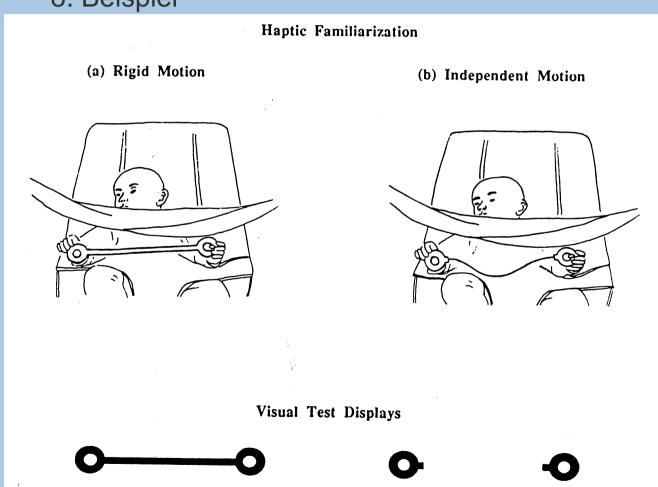
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## 5.4 Ausgewählte Experimente







**Figure 8.** Displays and apparatus for an experiment on haptic perception of object unity and boundaries (Streri & Spelke, 1988).

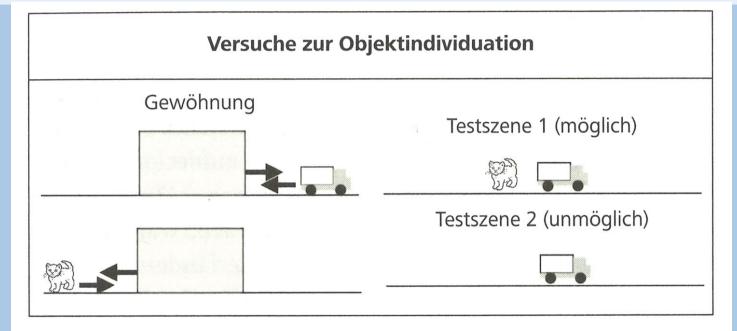
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## 5.4 Ausgewählte Experimente



### 5.4 Ausgewählte Experimente



In der *Gewöhnungsphase* sieht das Kind, wie abwechselnd ein Fahrzeug auf der einen Seite und ein Tier auf der anderen Seite hinter dem Wandschirm hervor kommt und wieder zurück gleitet.

In der *Testphase* wird der Wandschirm entfernt und gibt den Blick frei auf eine von zwei Szenen:

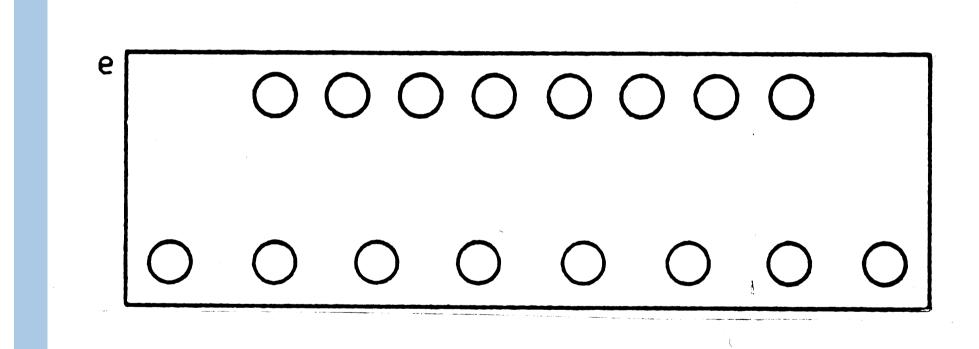
In Testszene 1 (erwartet) befinden sich zwei Objekte hinter dem Wandschirm. In Testszene 2 (unerwartet) befindet sich nur ein Objekt hinter dem Wandschirm.

Sabina Pauen 2007). Wie Babys denken. Eine Geschichte des ersten Lebensjahres. München: C.H. Beck, S. 116



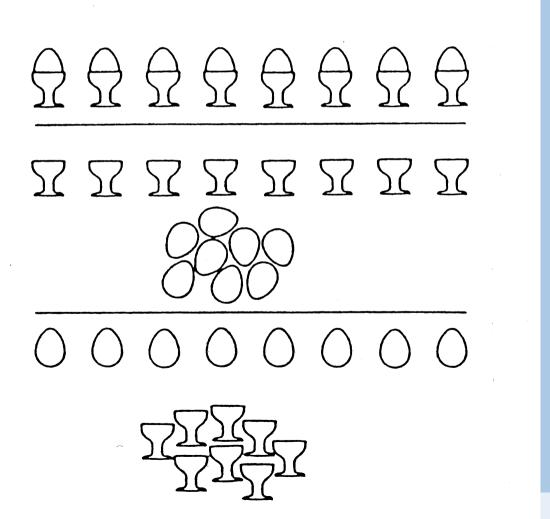
### 5.4 Ausgewählte Experimente

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## 5.4 Ausgewählte Experimente





## 5.4 Ausgewählte Experimente

| CONDITION | HABITUATION TRIALS | POSTHABITUATION TRIALS |  |
|-----------|--------------------|------------------------|--|
| A: 2 to 3 | •                  | •                      |  |
| B: 3 to 2 | • • •              | •                      |  |
| C: 4 to 6 | • • • •            | • • • • •              |  |
| D: 6 to 4 | • • • • • •        | • • •                  |  |
|           |                    |                        |  |

FIG. 1.—Simulus array for conditions 1-4



## 5.4 Ausgewählte Experimente

<sup>D</sup> Universität Bern

### TABLE 1

MEANS AND STANDARD DEVIATIONS OF LAST TWO HABITUATION AND FIRST TWO POSTHABITUATION TRIALS. BY CONDITION—(in Seconds)

|           | LAST TWO HABITUATION TRIALS  |                          | FIRST TWO POST-<br>HABITUATION TRIALS |                          |
|-----------|------------------------------|--------------------------|---------------------------------------|--------------------------|
| Condition | Mean:                        | SD                       | Mean                                  | SD                       |
| 2 to 3    | 15.3<br>15.9<br>14.9<br>15.3 | 5.6<br>7.6<br>5.9<br>9.8 | 30.8<br>26.6<br>15.9<br>17.8          | 9.1<br>6.6<br>9.2<br>4.7 |

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## 5.4 Ausgewählte Experimente

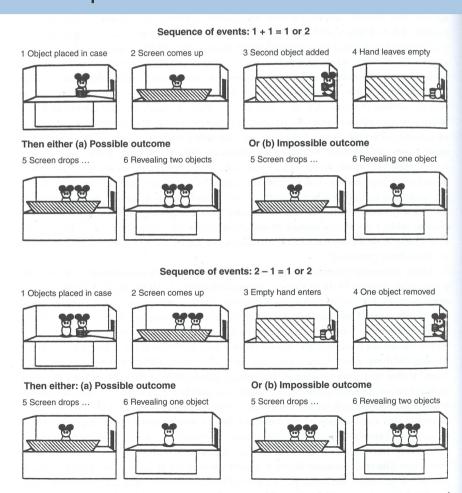


Figure 6.9 Displays used by Wynn (1992) to investigate infants' knowledge of addition and subtraction. The addition event sequence is above and subtraction event sequence below.



## 5.4 Ausgewählte Experimente

Gesamteinschätzung der 11 Studien