

Visuelles Bewusstsein und unbewusste Wahrnehmung

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Bob Halford, Judas Priest's vocalist, sings the "offending" verse in the Reno courtroom.

encourage our record-buying public to go out and kill themselves. Then we started to hear things, like there had been suicide attempts in those families. They had gambling and drug problems, they were violent towards the children. The teen boys were kids that nobody liked; they'd allegedly been planning mass murder.

Not being so far with the American legal system at the time, I just couldn't believe that anybody could take it seriously enough for it to get to court. But I was wrong.

My Varcoe was to be their star witness. As the court case got closer, it must have dawned on him that he would be on the stand, looking like he did, facing a band he'd always thought was great, and then finally when the judge said there would be television cameras in court, just prior to the case, he died of an overdose. You have to ask yourself who really was responsible for that kid's death?

Mike Henderson (reporter, Reno Gazette-Journal): When the trial convened on July 16, 1990, I was assigned to cover it. The notion that someone might cause someone to commit suicide was such a legal novelty, and you had rock stars involved as well as, of course, it became a huge international media circus. Also, because of the age of the boys involved, it became an intensely emotional thing, which, kind of, kept the exposure. Obviously the families had a lot of community feeling for them locally, but others here that the case seemed a lot far fetched.

Glenn Tipton: The very first day in court, one of the prosecution lawyers stood up reading one of Ray Belknap's suits. It was just like Perry Mason, you know this man standing in the clothes of a man that, looking the defendant that had killed them, and he turned around and looked at us. That was the point when I finally realized how serious the whole thing was.

Bob Halford (vocalist, Judas Priest): I thought there would be some big show-ups at the courthouse for the public, really surprised as I was walking on downtown Reno, and the old guy who had been in his seventies, came up and said, "This is the first time you've been in court. This is a real world of lawyers, money and social power flow come to me." Every day, that kept it alive forty-five minutes the court.

Mike Henderson: I've never seen a heavy metal fan face it. I had to spend a lot of time with the band, and I realized very quickly that they are not on stage, and that offstage persona. A completely different, I realized them playing guitar, even someone dropping out their, and that's where regular, ordinary guys.

Glenn Tipton: It's a fact that if you play speech and talk about a lot of it, and seem to make sense, to a certain extent to go into a judge and find some perfectly innocent phrases. Then, the lawyer didn't seem to do it, but I noticed. We thought a copy of the album in a shop, would be the whole, instead it is, I got, I guess it was and played it backwards, right away you could hear, "my star's broken" and "I've seen a replacement" and "my love's a lie".

Mike Henderson: The band's demeanor in court was very gentlemanly. They were polite. I was told that covered up his suit, and they were not at all nervous, but they were nervous. **Glenn Tipton**: It's ironic that to give evidence in court, because he was the one who had actually sung the lyrics, so in that sense he was the one being most directly accused.



Judas Priest (from left): Bob Halford, Ian Hill, K.K. Downing, Scott Brown, Glenn Tipton. (Satan not pictured).



Bob Halford: I admitted on the stand that we had actually recorded backwards before, but it wasn't any hidden message. It was just gibberish. And you realize that the prosecution opening the champagne when I said that.



Glenn Tipton: Then Bob played a lyric from our song 'Inferno' - "Even so we must prepare a defense" - but when he played it backwards it sounded like "I have heard some music." It was so stunning that the prosecution lawyers stood up and shouted "This is gibberish, we don't believe this." So our lawyer offered to play for the deaths of these kids.



Rob Halford: I admitted on the stand that we had actually recorded backwards before, but it wasn't any hidden message. It was just gibberish. And you realize that the prosecution opening the champagne when I said that.



Jay Vance: I could hardly handle the gun. But I reloaded it and went ahead and shot.



Rob Halford: I thought on our super version, Anthony Pellicano, the Elton who analyzed the Williams tapes and the tapes of the stereo of the Kennedy assassination.



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There was so much blood I could hardly handle the gun. But I reloaded it and went ahead and shot.

Rob Halford: I thought on our super version, Anthony Pellicano, the Elton who analyzed the Williams tapes and the tapes of the stereo of the Kennedy assassination. Pellicano played "Star by You, Better Than Me" and established that the album you hear are the real thing, except that the guitar sound like a sound like "somewhere" and when you hear the drums over that, it could be a rockstar for "This is our".



Judas Priest guitarist K.K. Downing chats to fans during a break at the Reno courtroom on August 16, 1990.



Judas Priest, Stained Class (1978)

The Trial Of Judas Priest

Five years after heavy metal fan Raymond Belknap blew his head off with a shotgun, Judas Priest were hauled into a Nevada courtroom by the teenager's parents and accused of encoding backwards masking techniques to encourage their fans to kill themselves.

No. 47 Heavy metal suicide
Witness: Various
Event: The trial of Judas Priest
Date: Dec 23, 1985 - Aug 24, 1990
Location: Washoe County Courthouse, Reno, Nevada



The second, this Stained Class album.

Basically, the families claimed we had addressed and mailed messages on Stained Class, but the first defendant in America comes, breaks up of speech. In other words, you can say whatever you like, so long as you say what you're not saying. And you don't hear their message, because that's what I promised by the first agreement.

Bill Curbishley (manager of Judas Priest): The only hidden message I would look at an album would be "they're coming".

Glenn Tipton: Anybody in their right mind would realize that, if we were going to Jud a message, you're saying it, wouldn't you be so.



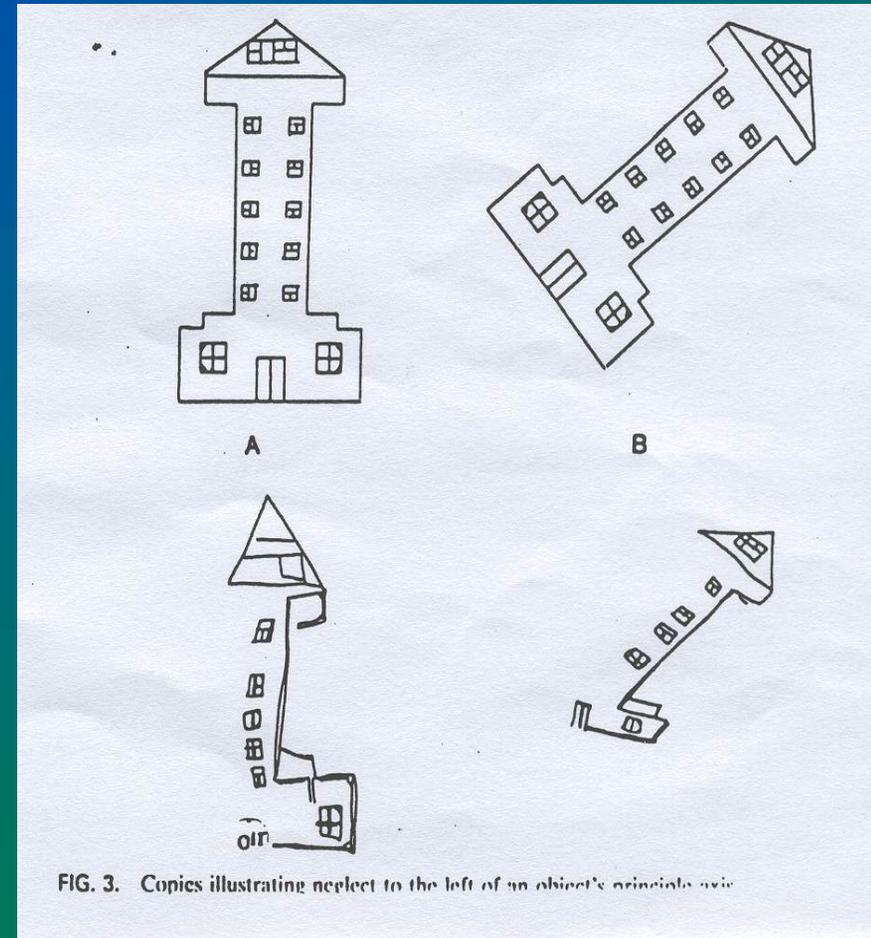
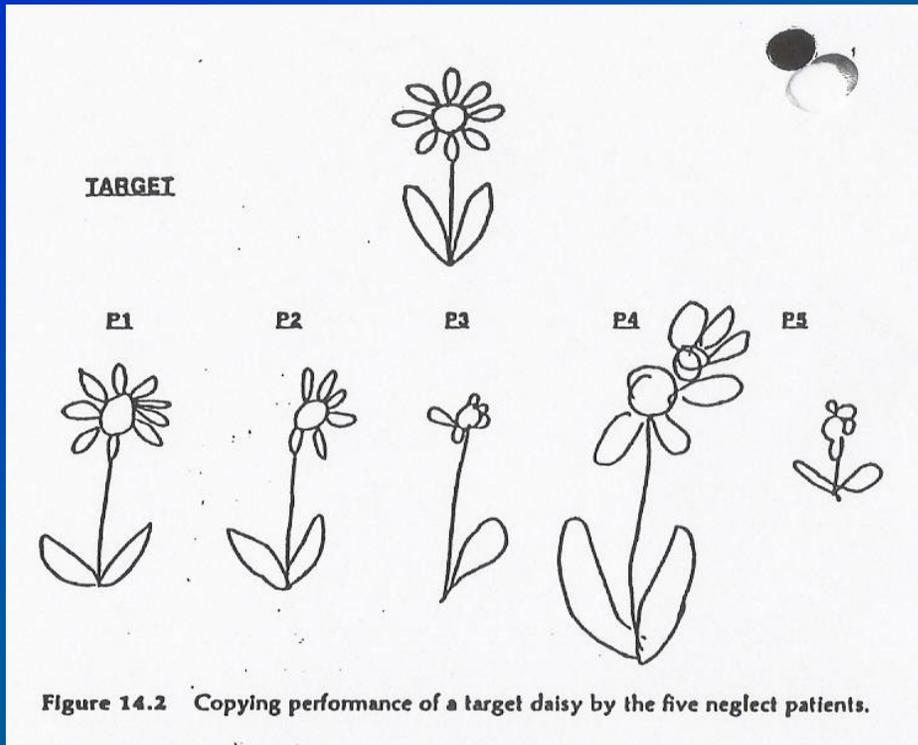
WHEN HEAVY METAL fan Raymond Belknap and his friends attempted suicide with a shotgun. Though Belknap died instantly, Vance, now 14, is recovering.

Jay Vance: There was just ting of blood. It was like the guy had given up. There was so much blood about 1000 yards from the car. I was in shock, you know, it was my turn, and I realized what I was thinking about all that time up to know, so much of your life.

Anthony Robinson, member of outside victim Ray Belknap, tried to sue Judas Priest for \$6.2 million.

Hemineglect

Nach Läsionen des rechten parietalen Cortex: linke Raumhälfte wird nicht mehr beachtet und nicht mehr bewusst wahrgenommen



Blindsight

Patient DB: Schädigung des rechten visuellen Cortex
Kompletter Gesichtsfeldausfall im linken visuellen Feld

DB gibt an, Reize im blinden Feld nicht zu sehen. Wenn er aber durch Zeigebewegungen raten soll, wo sie sich befinden, ist er fast genauso gut wie im sehenden Feld!

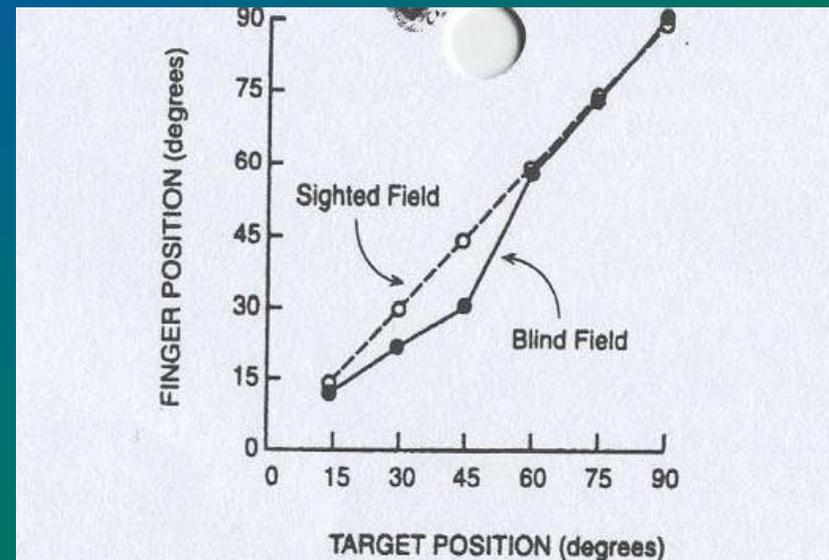
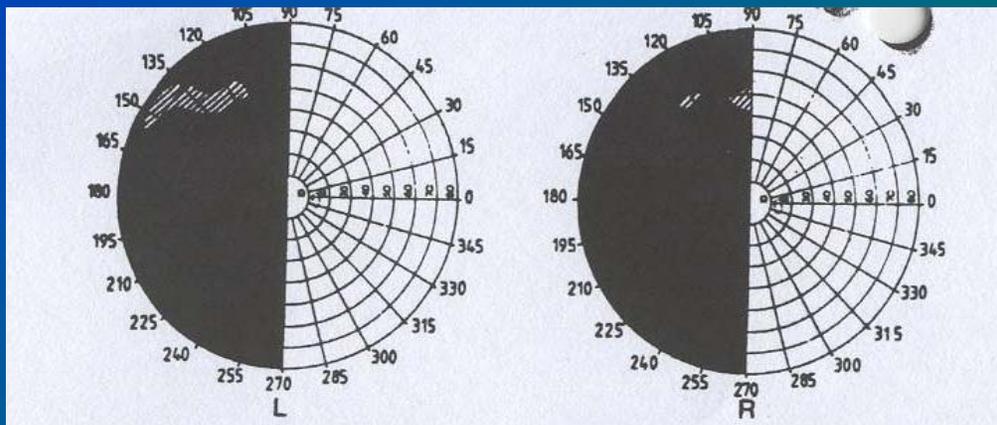
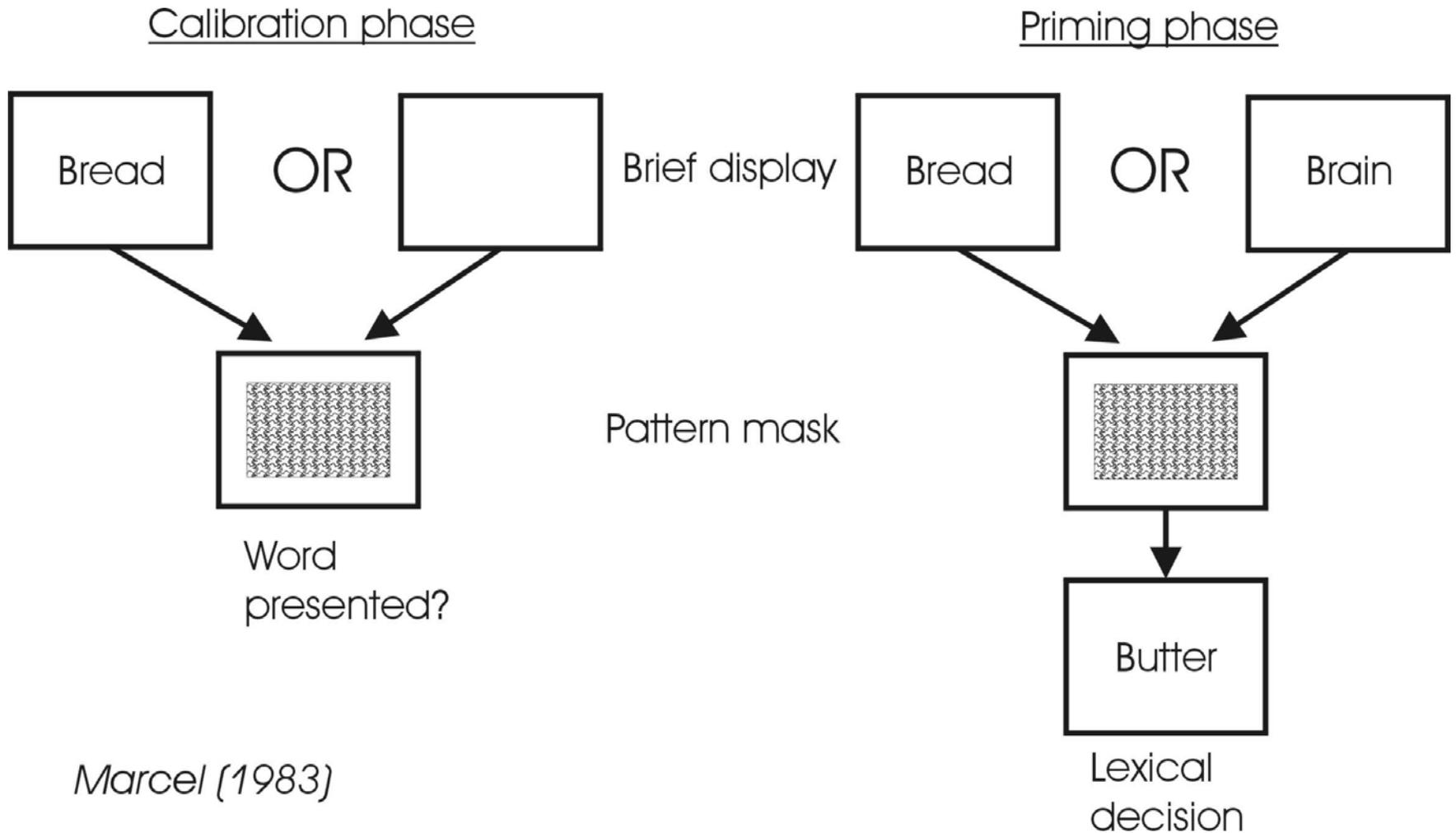


Figure 13.2.4 Accurate finger-pointing performance. D.B.'s ability to point to lights in his blind field (by guessing) was almost as good as that in his sighted field (by conscious seeing).

Unbewusste Wahrnehmung



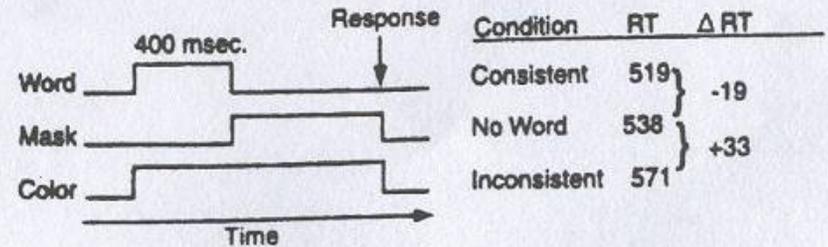
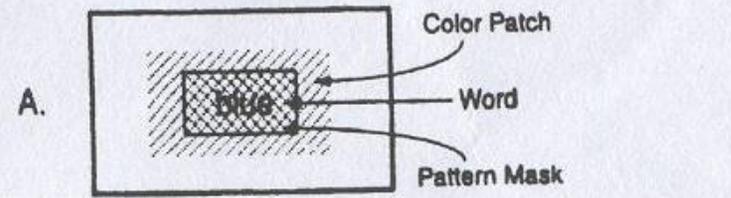
Semantisches Priming mit Maskierung



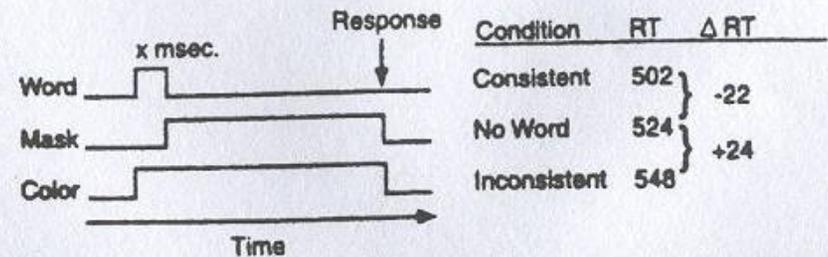
Marcel (1983):

Priming-Effekte sind bei bewusster und (fast) unbewusster Präsentation ungefähr gleich stark

Kritik: waren die Primes wirklich unbewusst?



B. SUPRATHRESHOLD CONDITION (CONSCIOUS)



C. SUBTHRESHOLD CONDITION (UNCONSCIOUS)

Figure 13.3.1 Subliminal perception in Marcel's modified Stroop experiment. A color word that is presented before a color patch facilitates or interferes with response time (*RT*) to name the patch when the word is presented consciously, as indicated by *RT* changes (ΔRT) relative to the no-word condition. Surprisingly, the same effects are present when subjects are not conscious of seeing the prior color word because of the rapid presentation of a pattern mask.

Response Priming:

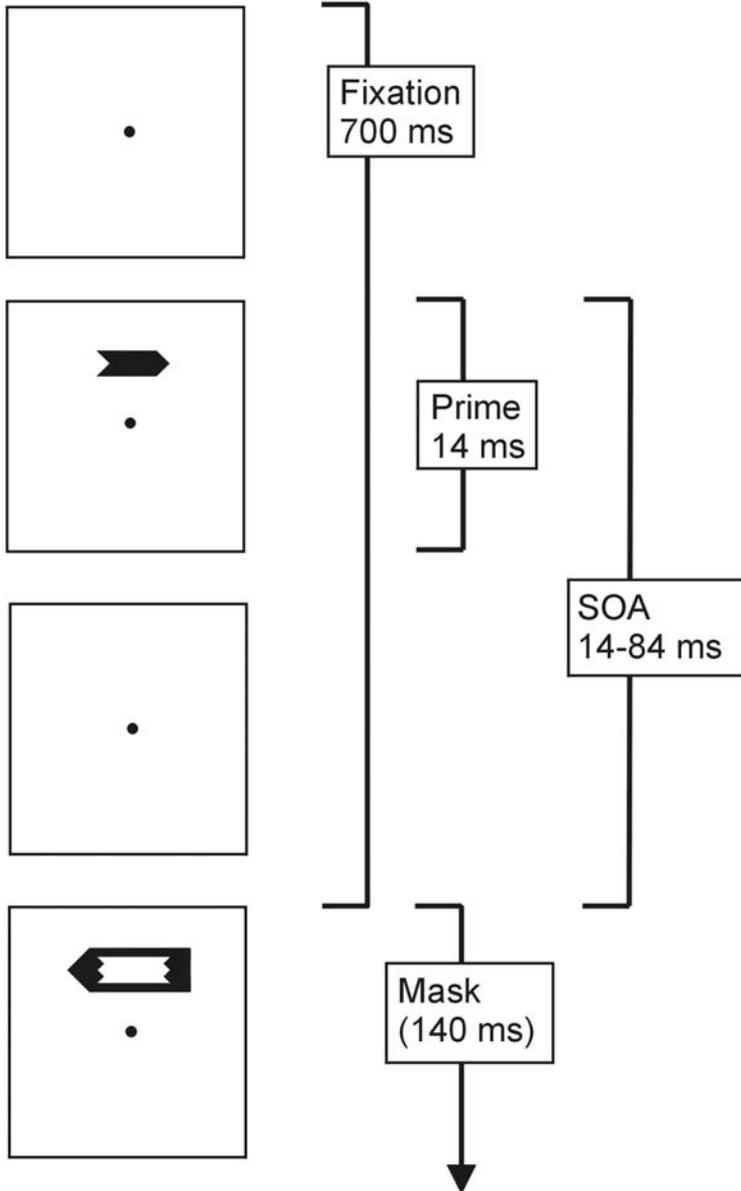
(Vorberg et al., 2003; Neumann & Klotz, 1994)

Priming-Effekt:

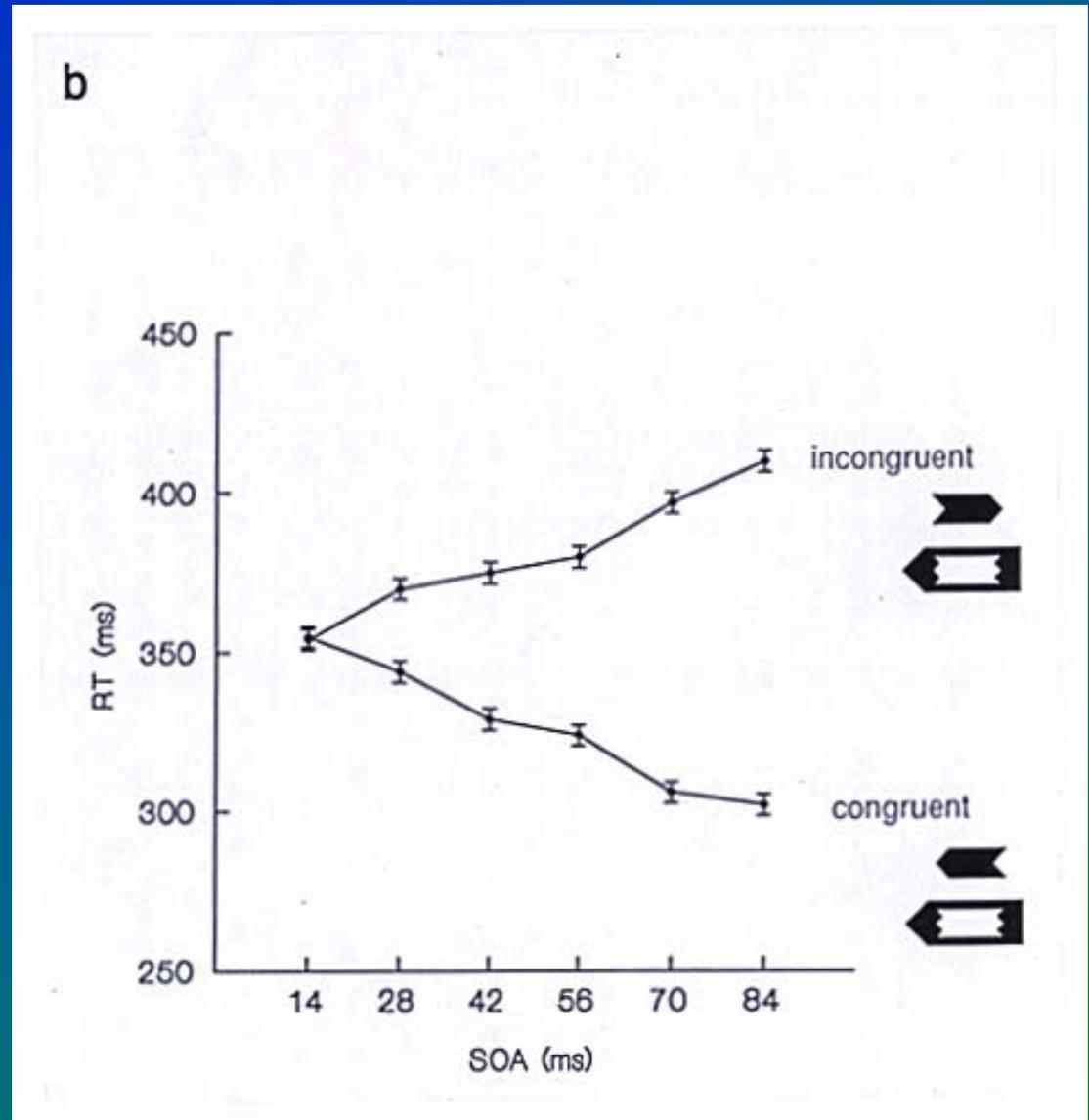
So schnell wie möglich auf die Richtung der Maske reagieren

Bewusstsein für den Prime:

Ohne Zeitdruck die Richtung des Primes erraten

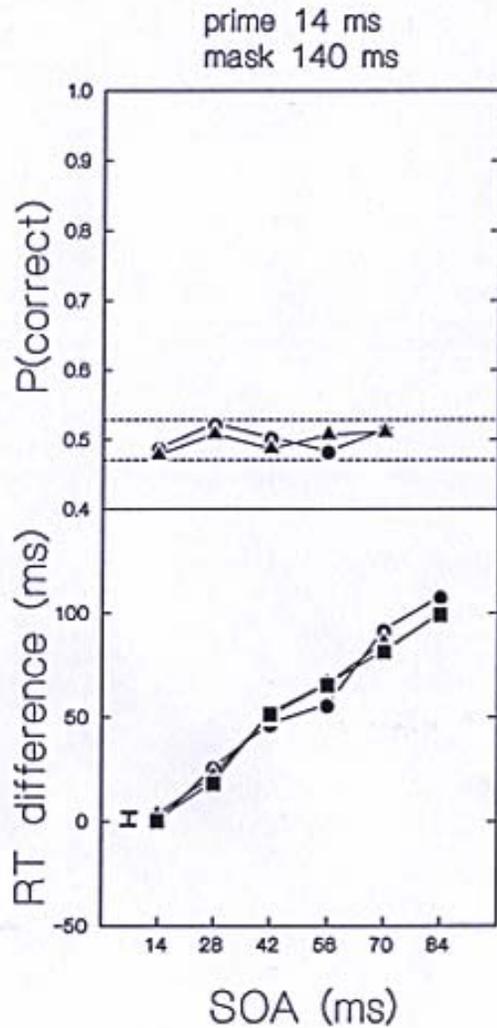


Priming-Effekt:

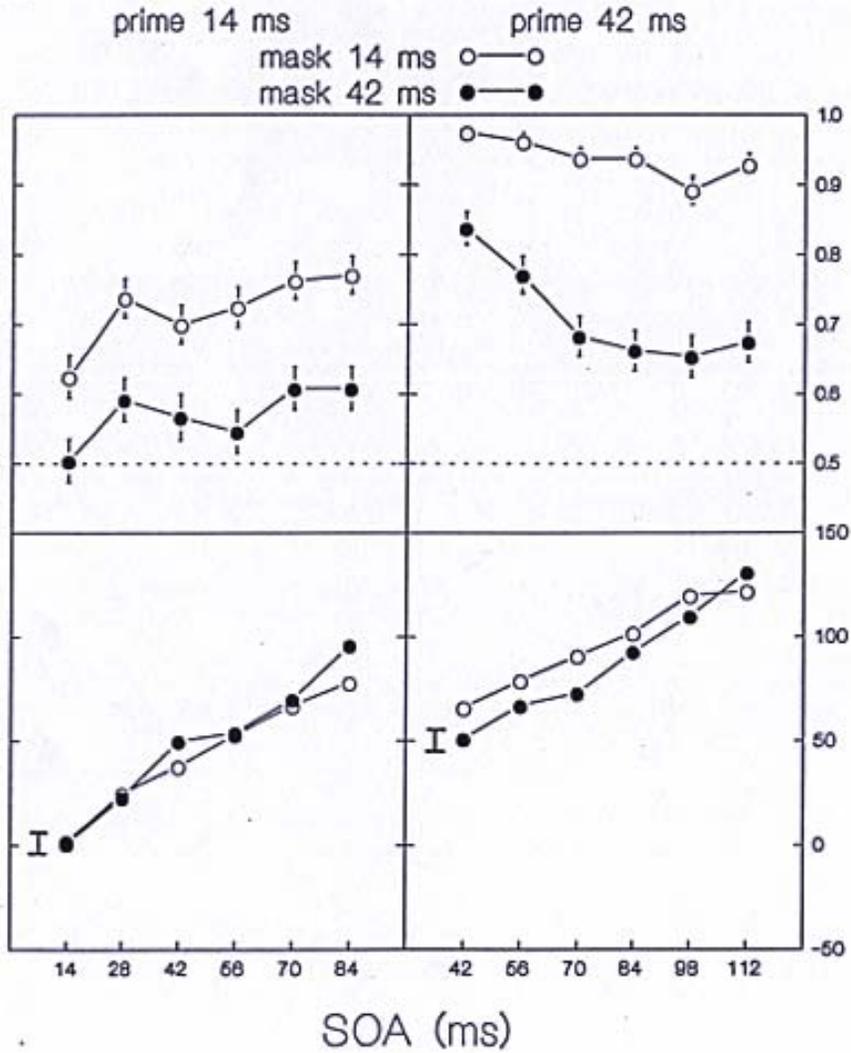


Bewusste Wahrnehmung des Primes?

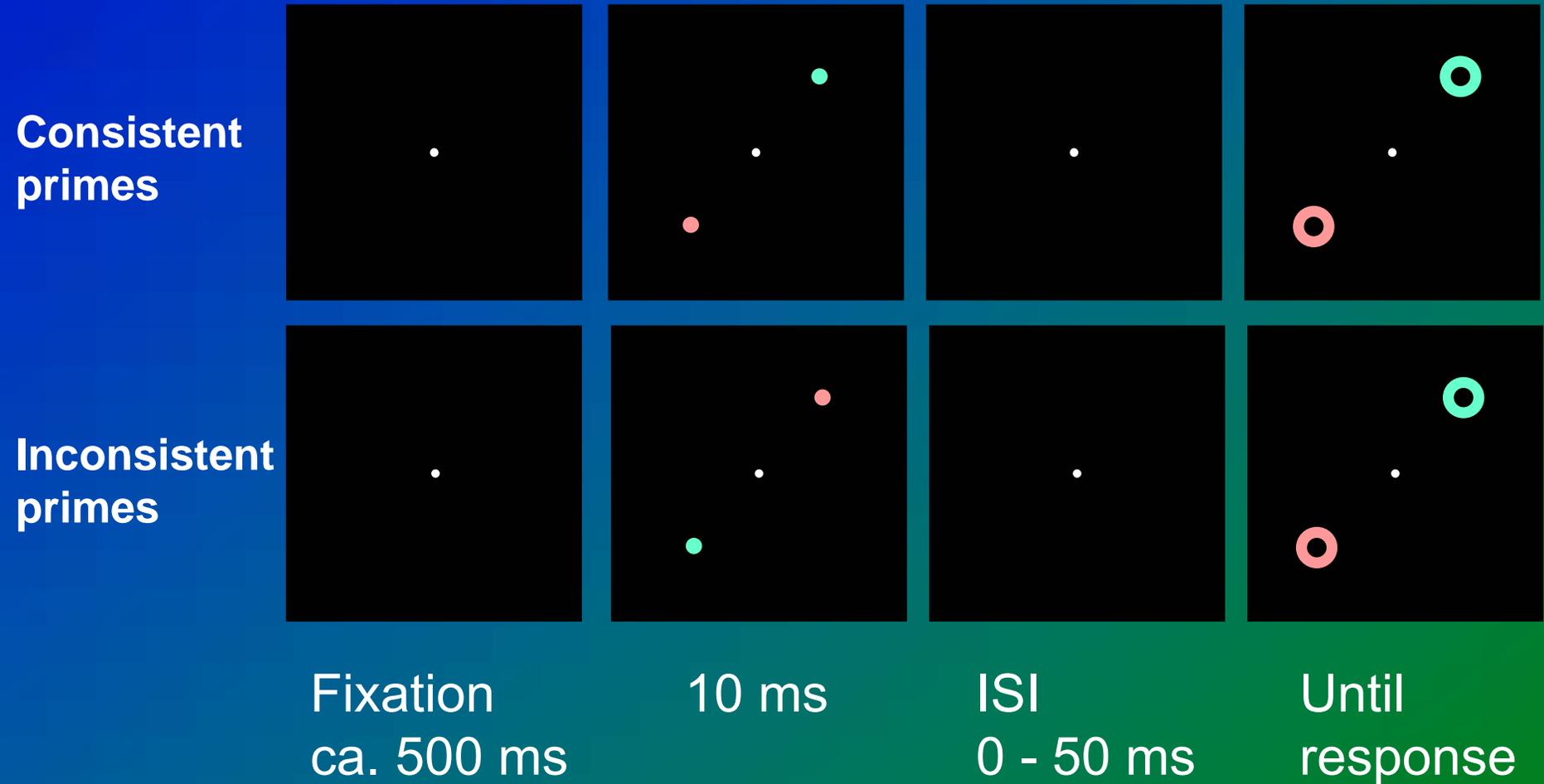
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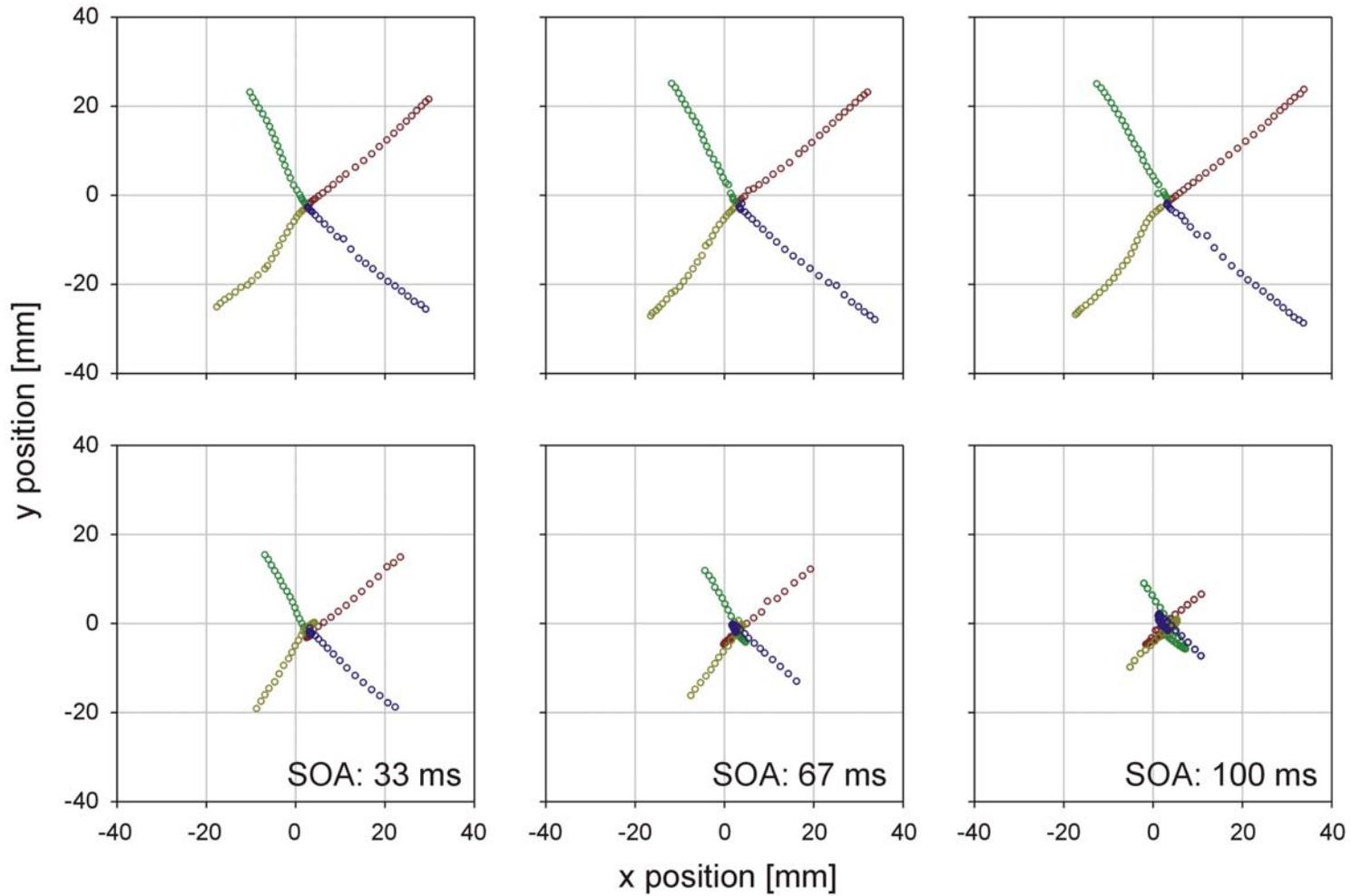
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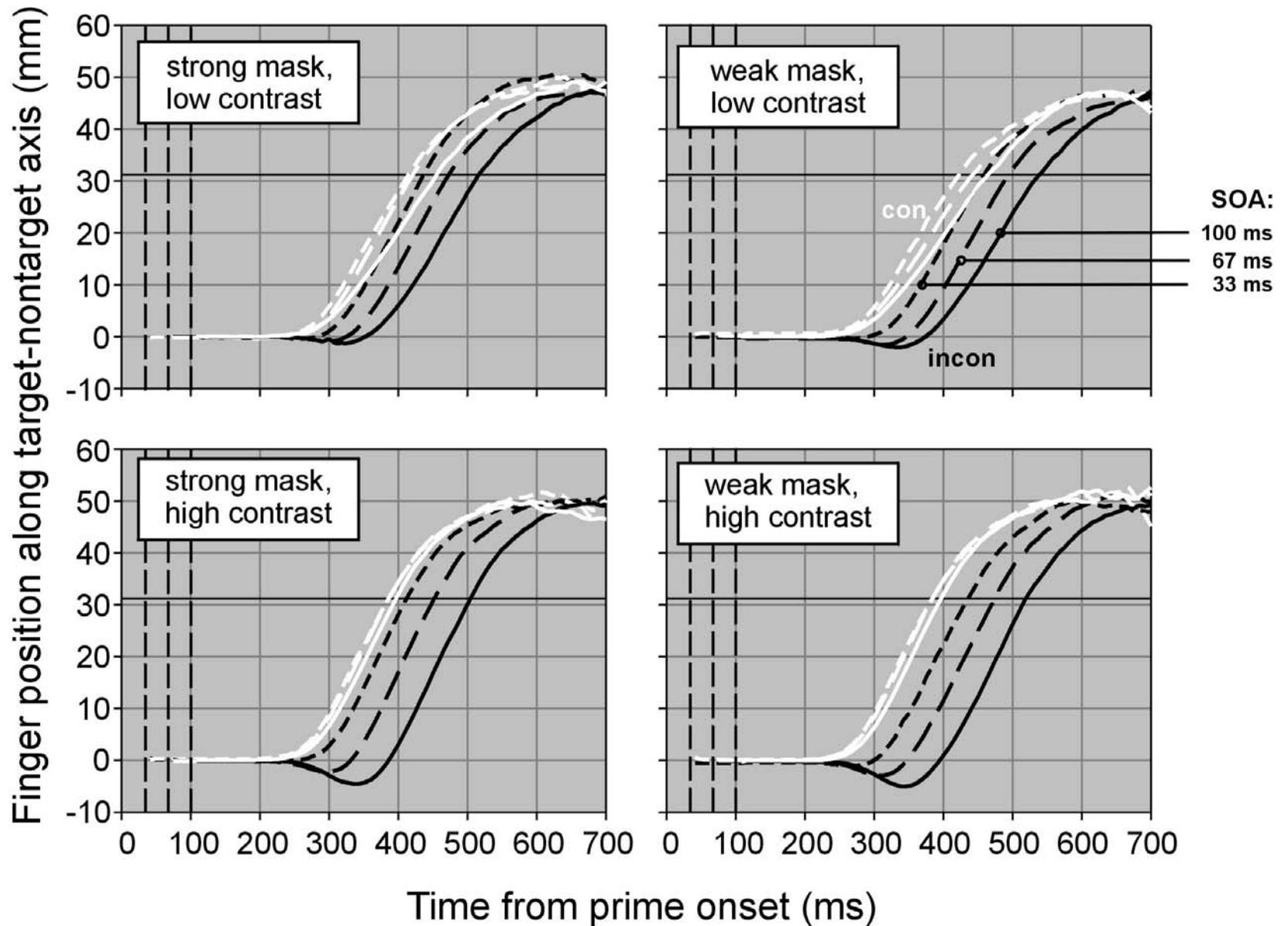
Schmidt (2002): Response Priming mit Zeigebewegungen



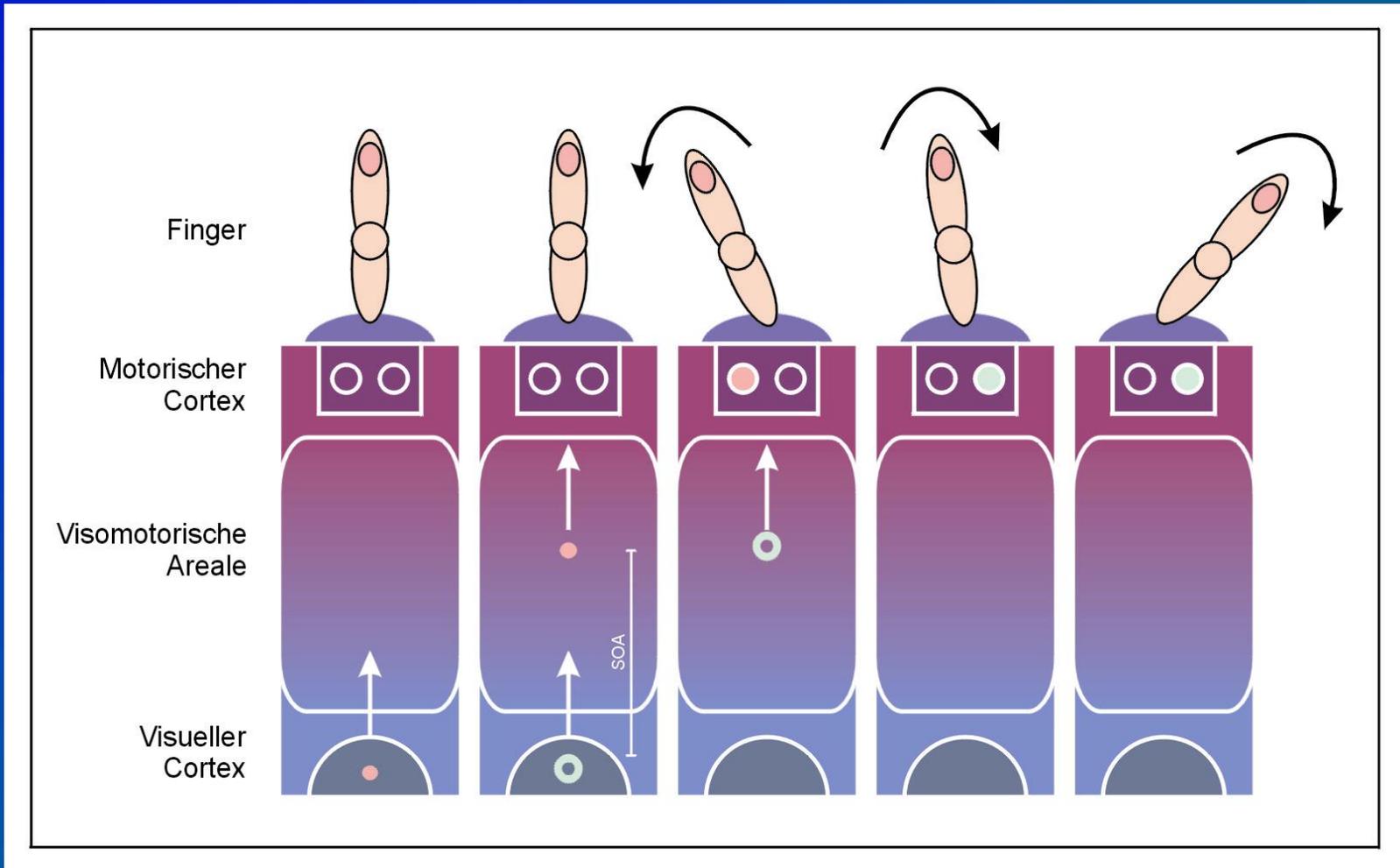
Exp. 5, pointing trajectories: weak masking, high contrast



Exp. 1: Pointing trajectories



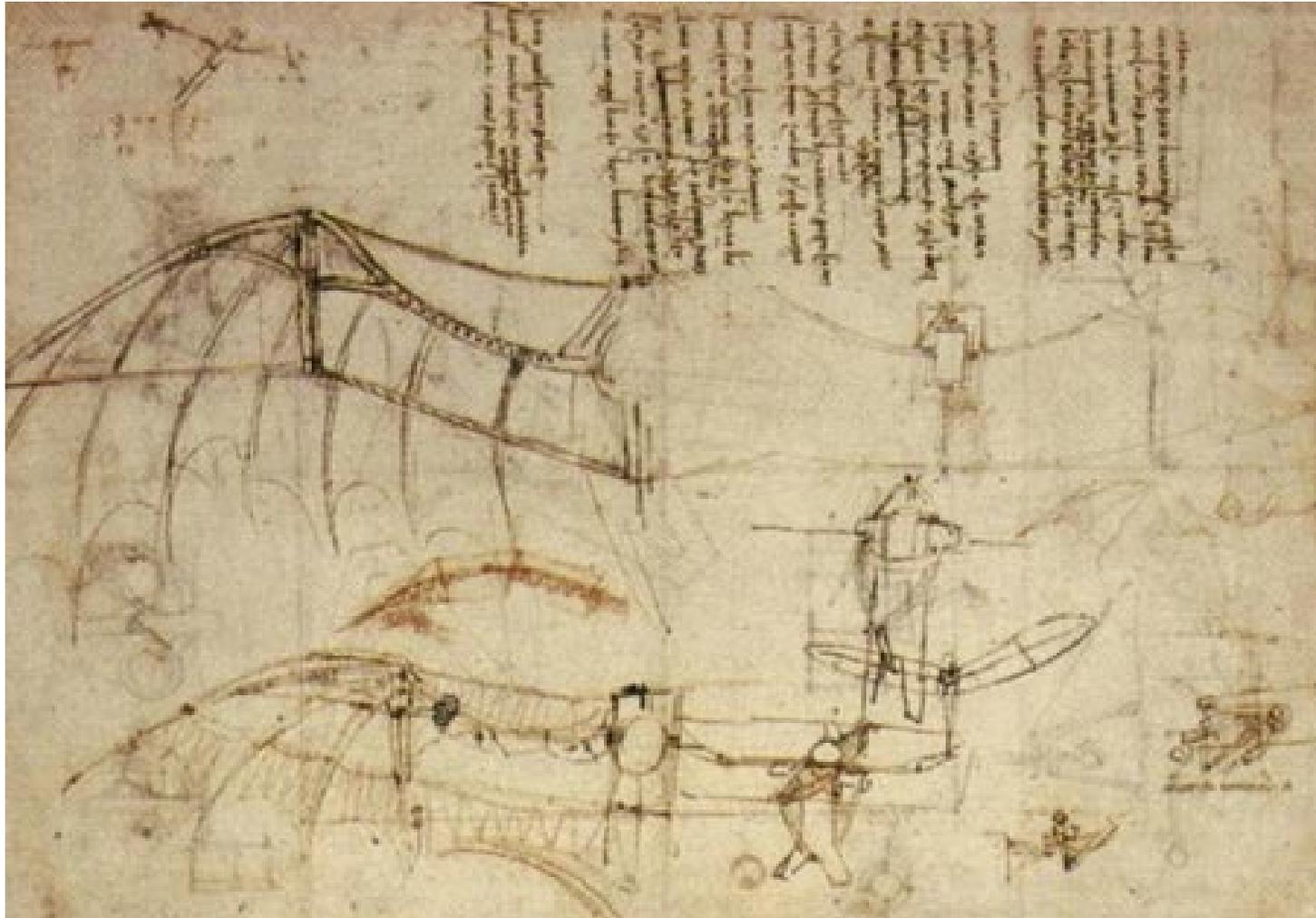
Response Priming als Verfolgungsjagd



Rapid-Chase-Theorie:

Schmidt, Niehaus & Nagel (2006), Vath & Schmidt (2007)

Wie funktioniert das Bewusstsein?



Crick-Koch-Vermutungen

1.) „*The lower layer conjecture*“

- Neuronen für Bw. liegen in unteren Abschnitten des visuellen Kortex
- „reverberatory circuit“ ($A \rightarrow B \rightarrow A \rightarrow B \dots$)

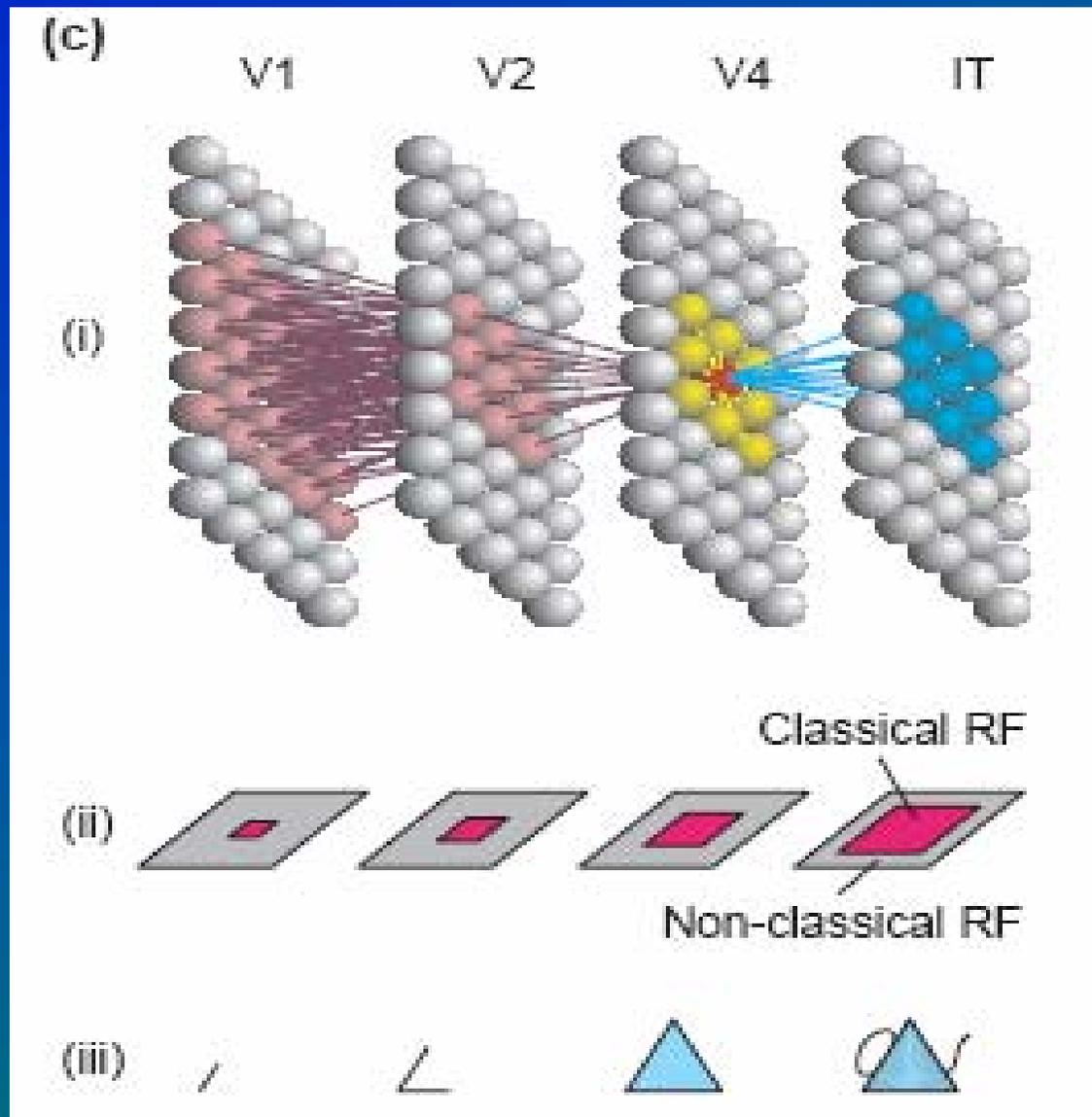
2.) „*The 40 Hertz conjecture*“

- charakteristisch für Bw. ist ein Feuern der Neuronen mit einer Frequenz von ca. 40 Hz
- Lösung des „Binding Problem“ : alle Neuronen geben gleichzeitig Antwort auf einen bestimmten Reiz

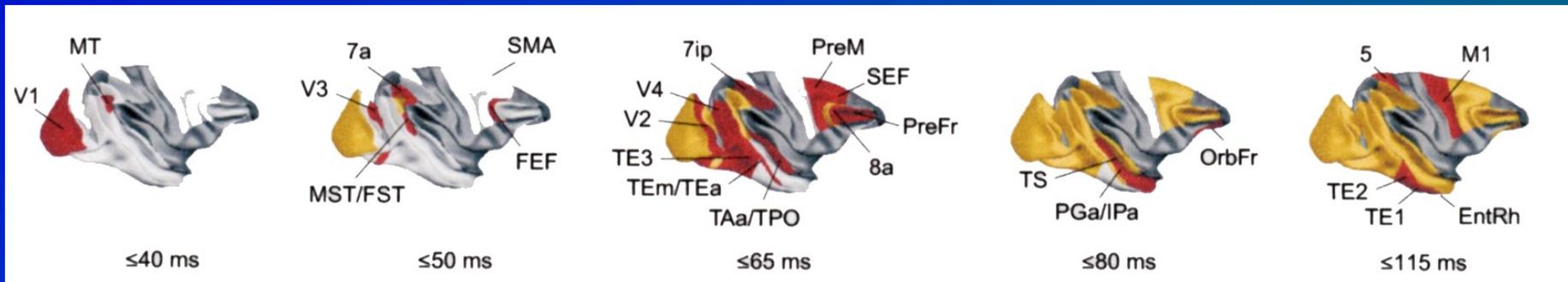
3.) „*The frontal lobes conjecture*“

- Frontallappen ist wahrscheinlich das „neural correlate of consciousness (NCC)“
- Empfängt Input von vielen anderen visuellen Arealen im Gehirn
- Output zu motorischen Arealen des Gehirns

Feedforward- und Feedback-Verbindungen



Lamme et al.'s (2000) Theorie des **Feedforward-Sweep**:

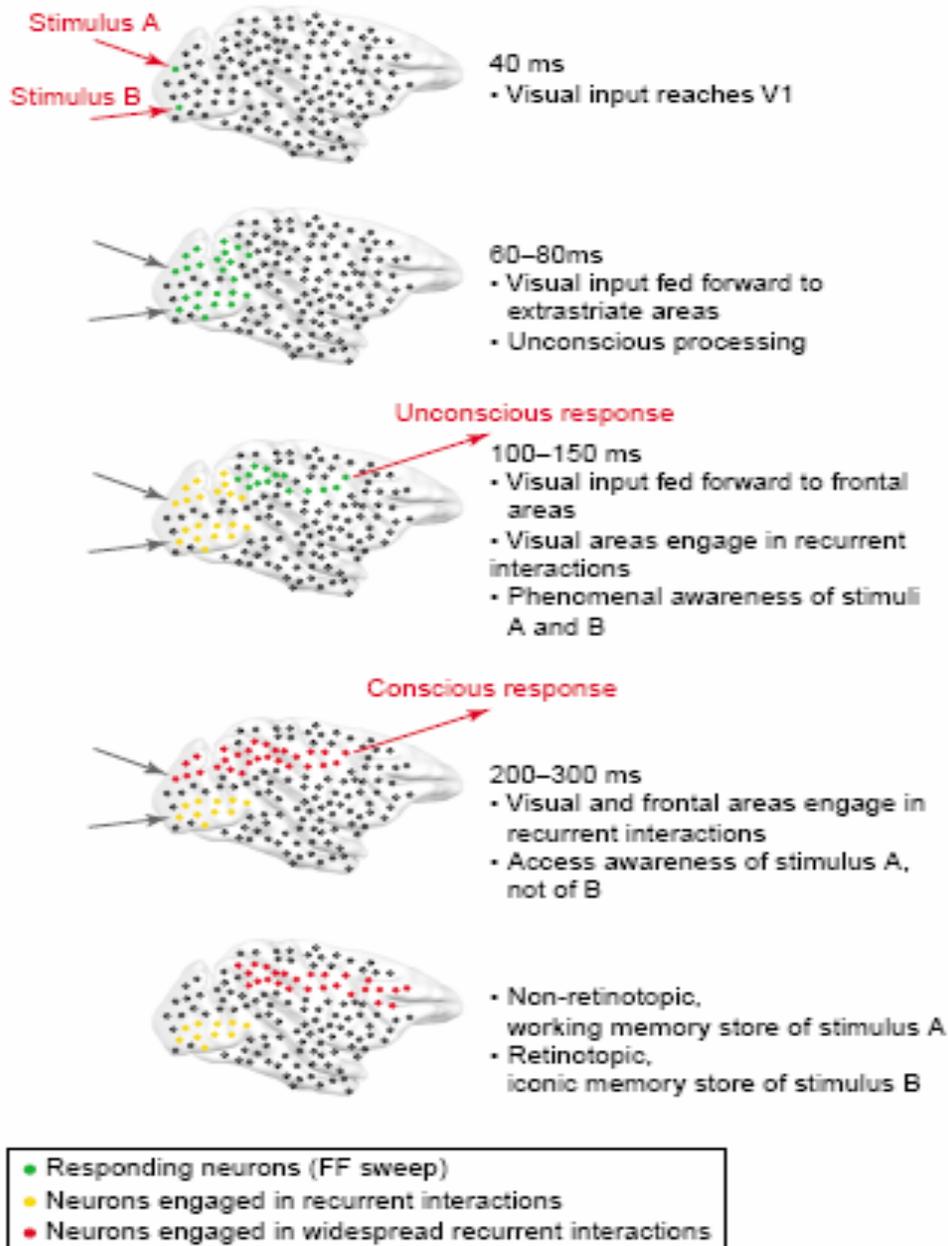


- Neuronale Aktivierung bracht etwa 10 ms, um von einem Areal zum nächsten zu springen.
- In dieser Zeit können Zellen nur ca. ein Mal feuern, so dass sie vor der Weitergabe der Information kein Feedback verarbeiten können. Deshalb kann die Wellenfront des „Feedforward Sweep“ nur Feedforward-Information enthalten.
- Der Feedforward Sweep erreicht innerhalb von ca. 120 ms jedes Cortexareal.
- Feedforward-Aktivität reicht nicht aus, um Bewusstsein zu erzeugen – hierfür sind rekurrente Prozesse und Feedback notwendig.

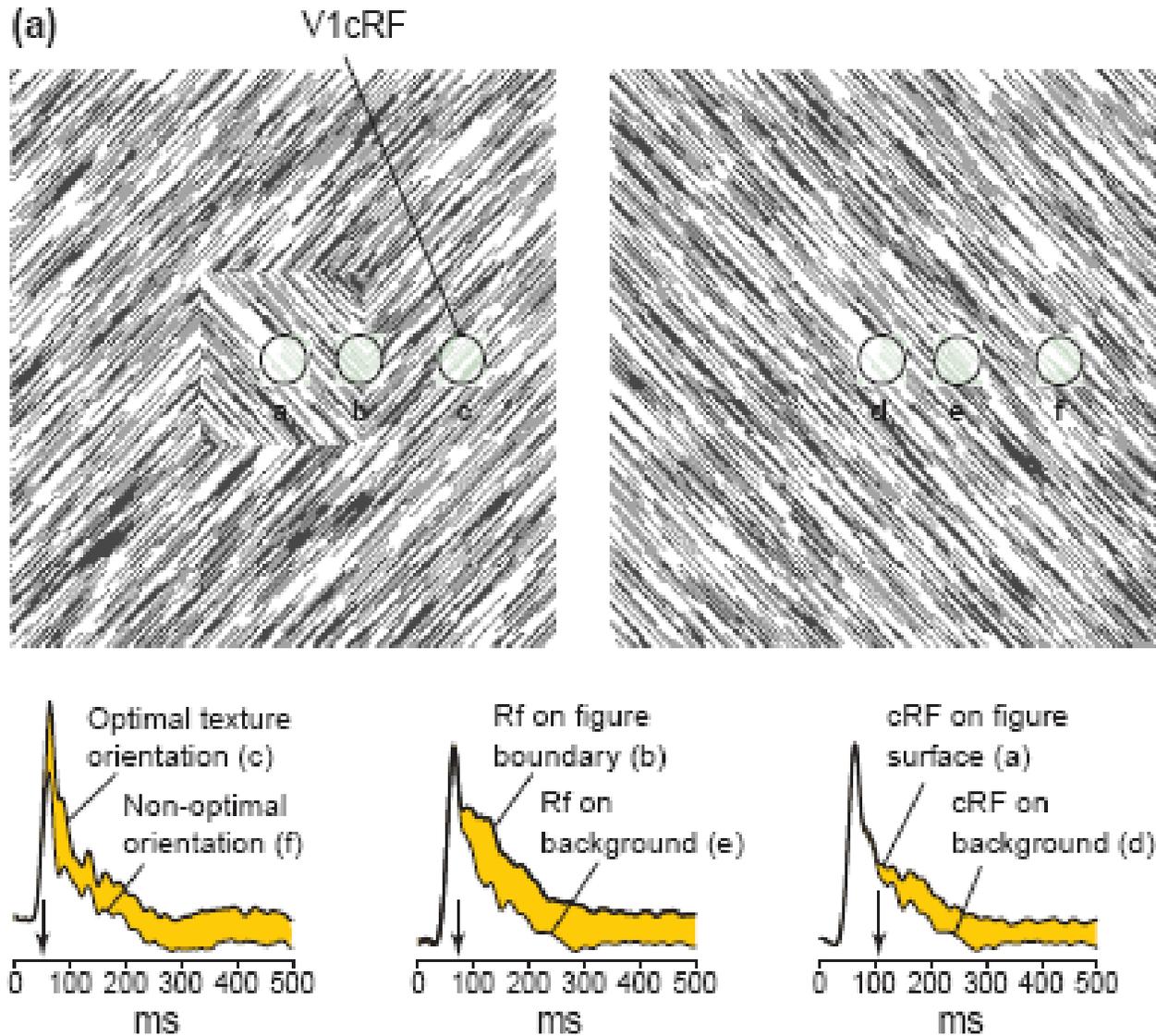
Lamme (2002):

Der Feedforward Sweep ist unbewusst

Bewusstsein entsteht erst durch rekurrente Aktivität



Lamme & Roelfsema (2000): Zellen in V1 ändern ihre Codierungseigenschaften durch rekurrente Prozesse



Visuelle Rückwärtsmaskierung

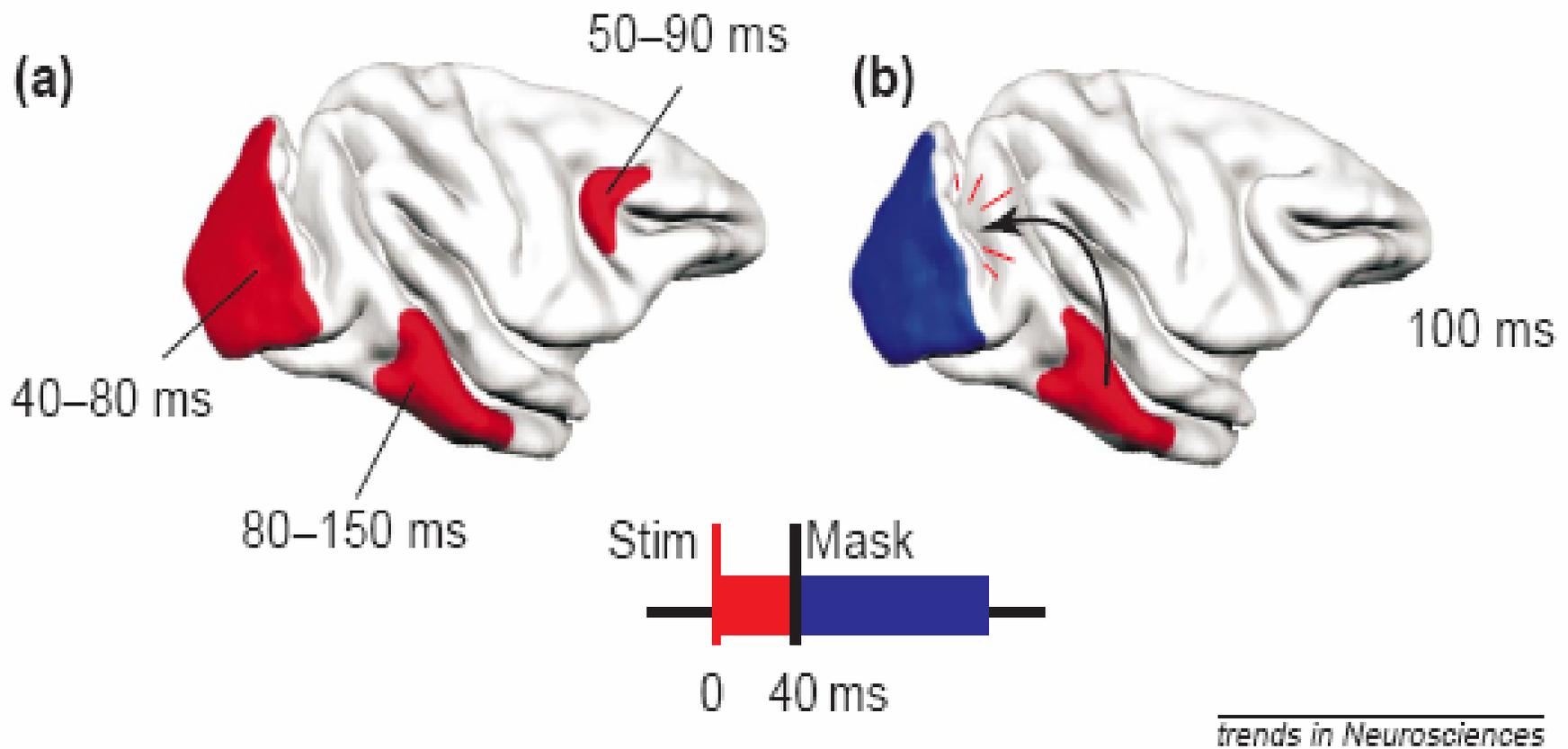
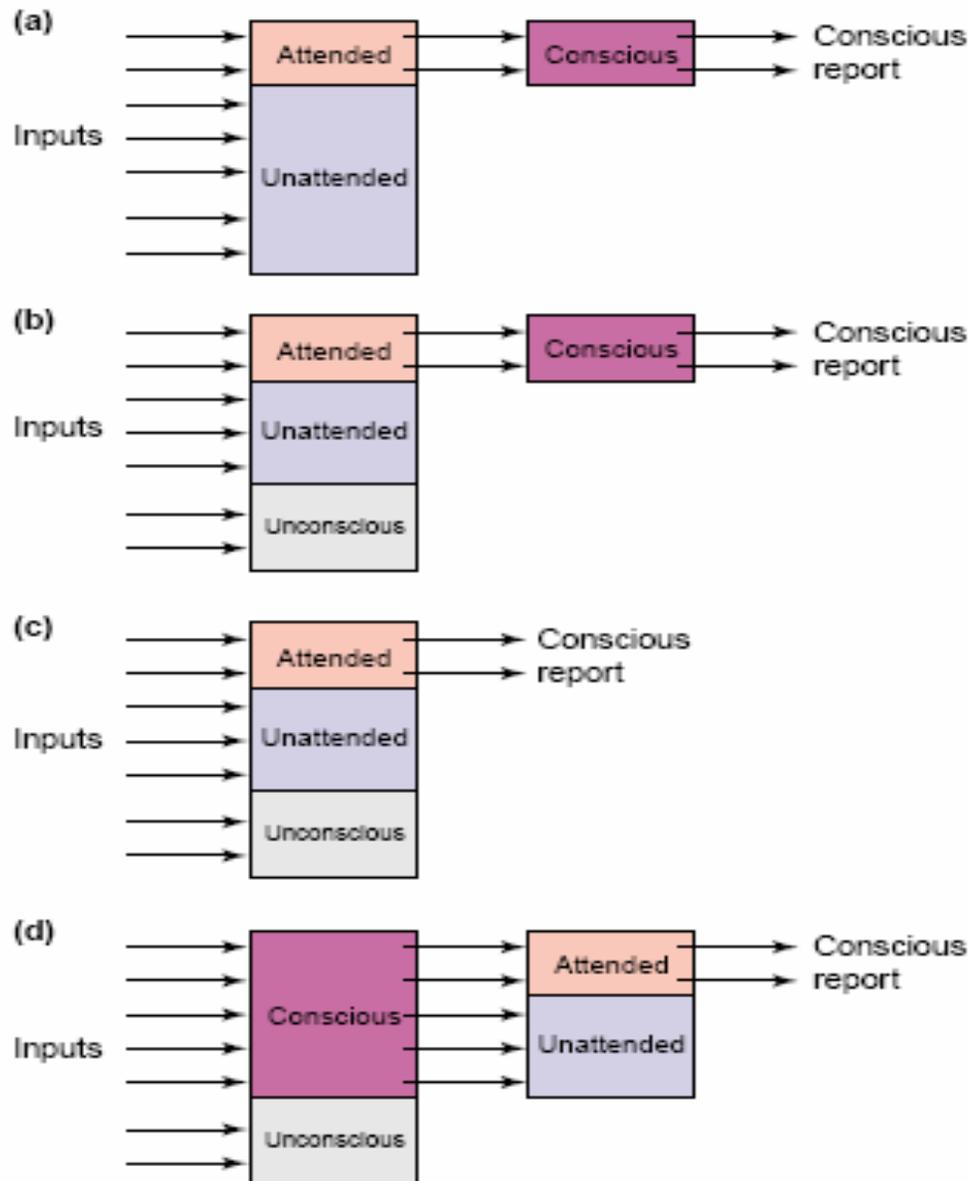


Fig. 3. Masking interrupts recurrent interactions. Neural activity was evoked by a stimulus

Was kommt zuerst:

Aufmerksamkeit
oder Bewusstsein?



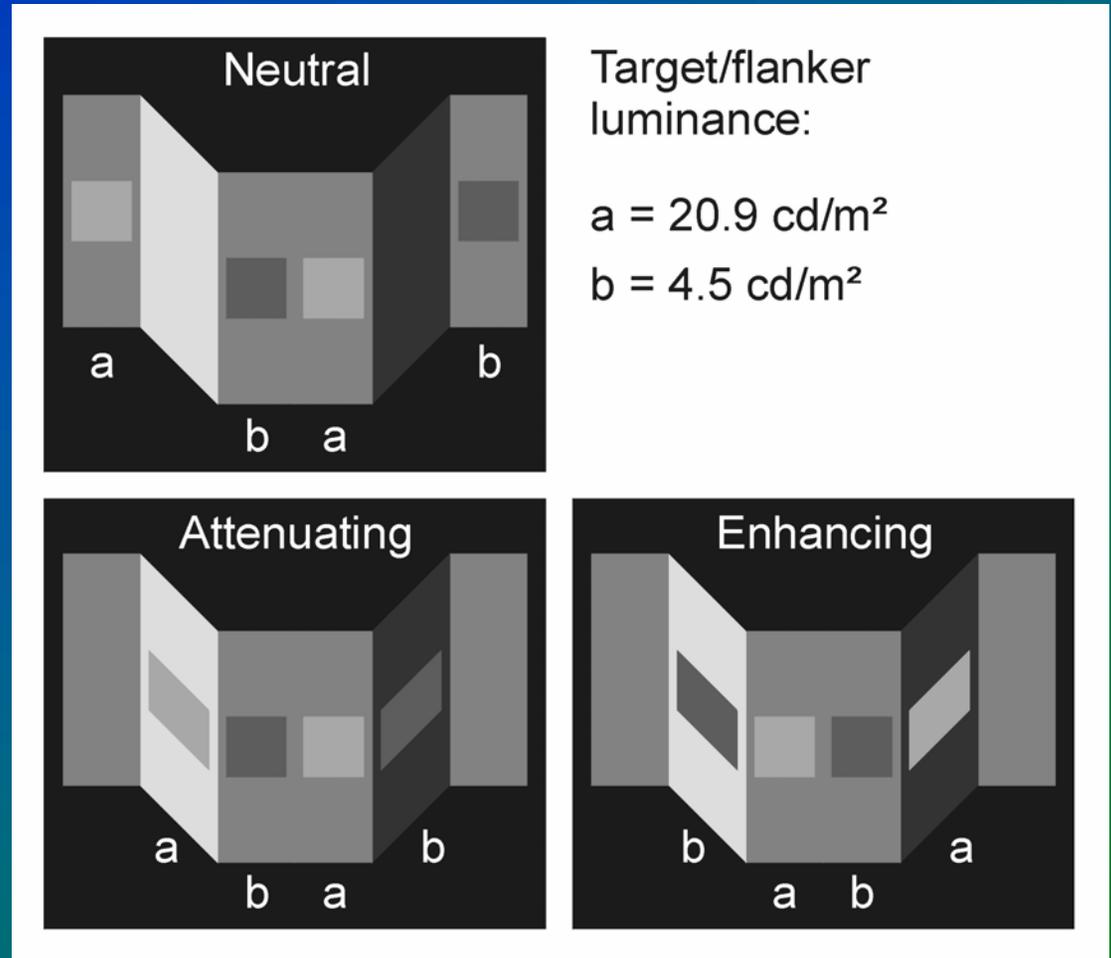
Wie kann man frühe Stufen der Helligkeitswahrnehmung sichtbar machen?

Vpn reagieren auf das hellere der beiden zentralen Quadrate

Reaktionszeit wird von den flankierenden Rechtecken beeinflusst

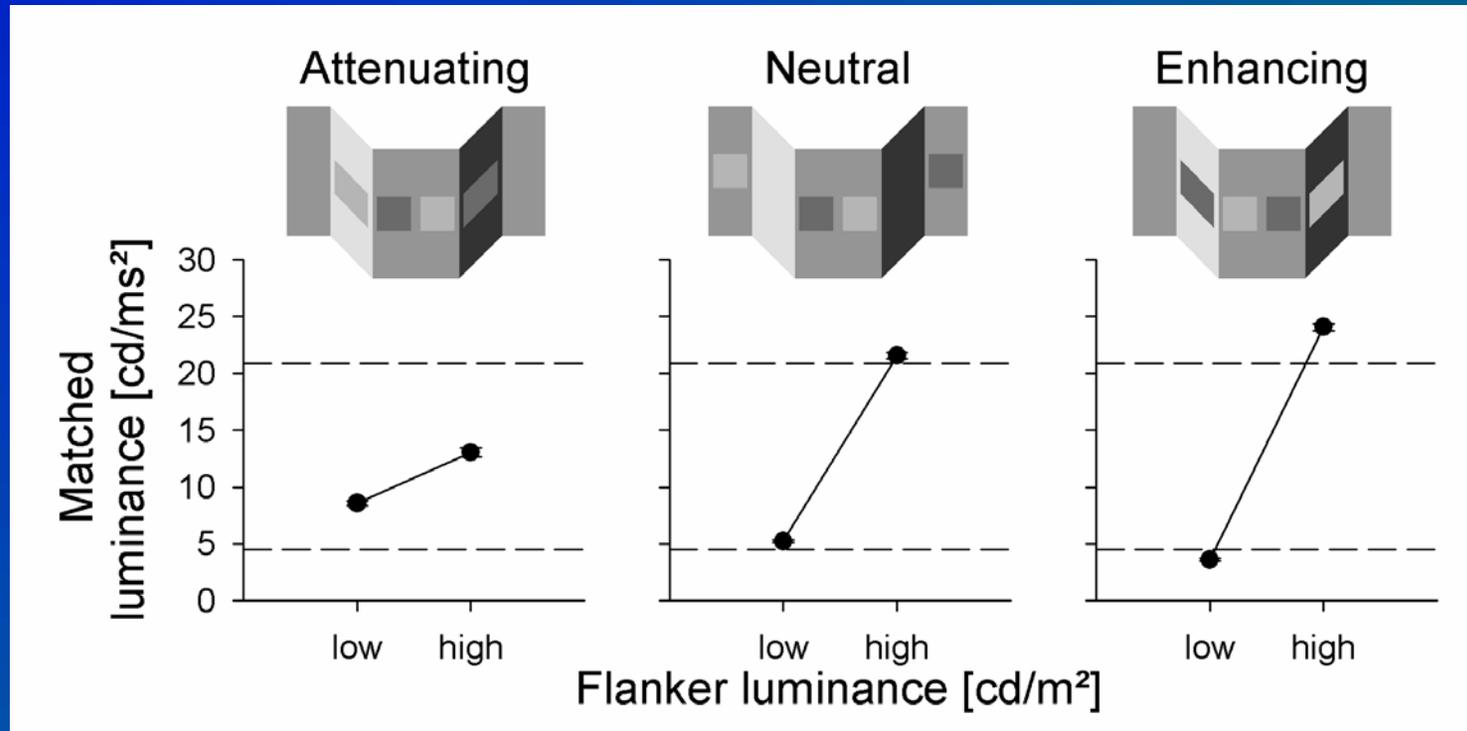
Luminanzen der Flankierreize können **konsistent** oder **inkonsistent** mit den Zielreizen sein

Helligkeitsillusion kann die Flankierreize **ähnlicher** oder **unähnlicher** erscheinen lassen



Messung der Illusion

Schmidt, Miksch & Bulganin (eingereicht)

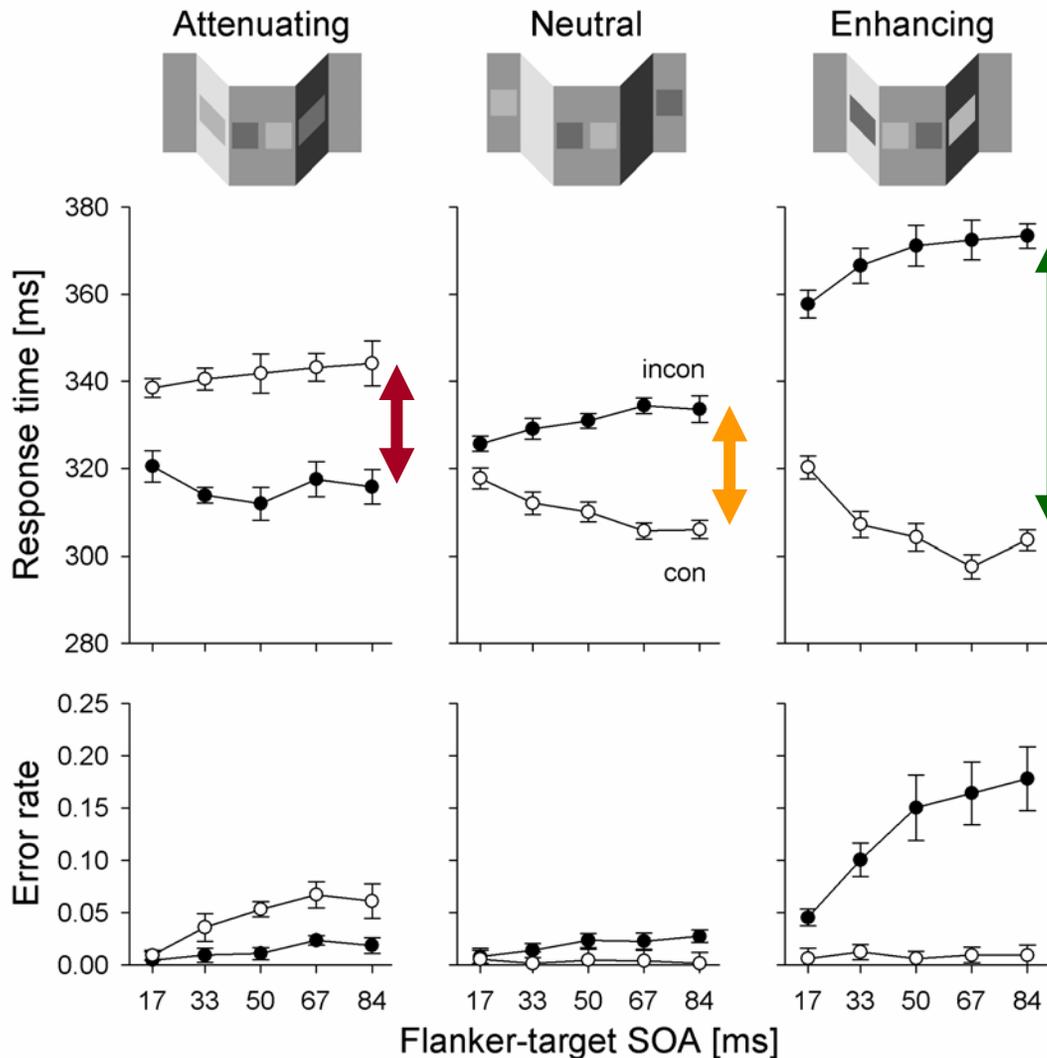


Vpn geben die wahrgenommene Helligkeit (Lightness) der Flankierreize an, indem sie die Luminanz der Zielreize entsprechend verstellen

Die Illusion beeinflusst die wahrgenommene Helligkeit, aber der Flanker mit der höheren Luminanz wird immer als der hellere wahrgenommen

Reaktionszeit-Effekte

Schmidt, Miksch & Bulganin (eingereicht)



Konsistente Flanker beschleunigen die Reaktion auf die Zielreize; inkonsistente Flanker bremsen die Reaktion ab.

Illusion betont die Unterschiedlichkeit der Flanker: Effekt wird stärker.

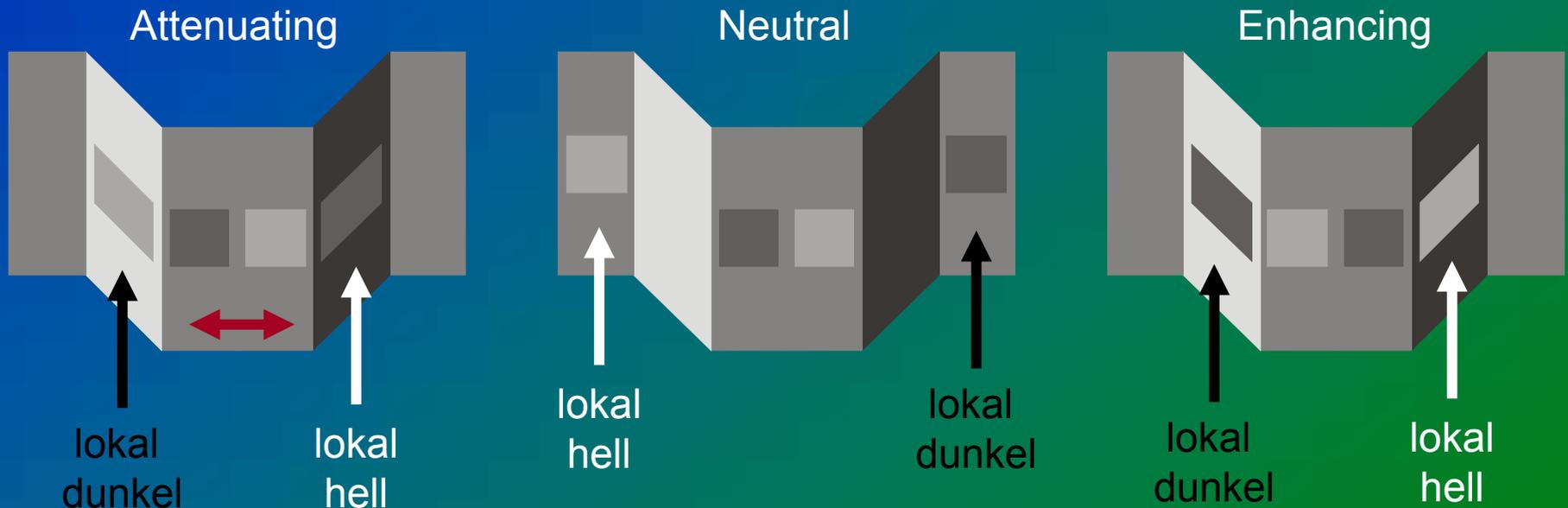
Illusion lässt Flanker ähnlicher erscheinen: Der hellere Flanker wirkt auf die Reaktionszeiten, als wäre er der dunklere (obwohl er heller aussieht)!

Unsere Interpretation:

Reaktionszeiteffekt entsteht so schnell, dass er nur lokale Helligkeitskontraste berücksichtigt, aber keine Beleuchtungseffekte.

Bewusste Repräsentation beruht dagegen auf der Gesamtinterpretation der Szene, inkl. Licht und Schatten.

Deshalb kann ein Reiz zwar heller aussehen als der andere, aber auf die Reaktionszeiten wirken, als wäre er dunkler.



Zusammenfassung

- Unbewusste Wahrnehmung gibt es wirklich, aber nicht im Sinne subliminaler Manipulation.
- Beim Response-Priming findet automatische Antwortaktivierung völlig unabhängig von der bewussten Wahrnehmung der Primes statt
- Response-Priming könnte durch den Lamme's „Feedforward Sweep“ geschehen, wobei Primes und Targets das System nacheinander wie in einer Verfolgungsjagd durchlaufen
- Durch solche „Feedforward-Aufgaben“ kann man möglicherweise vorbewusste Verarbeitungsprozesse sichtbar machen, z.B. frühe Stufen der Helligkeitsverarbeitung

Fazit: Die frühe Verarbeitung visueller Reize erfolgt zunächst immer unbewusst; sie kann später bewusst werden (evtl. durch rekurrente Prozesse) oder unbewusst bleiben.