I want to challenge a common view in memory. This view has been a major driver of research in the last 100 years or so, and, granted, it has given us important insights about the basic organization, structure and properties of human memory. Under the guidance of this paradigm, we have learned about some basic memory distinctions based on content, capacity, duration, awareness, etc. We have uncovered a multitude of factors that affect every stage of mnemonic processes, starting with encoding, through retention and retrieval. We have made progress in understanding the nature of forgetting, and also the way stimuli are bound to one another and to the encoding context.
This structural view of memory considers simply to be a system for the encoding, storage and retrieval of information. More importantly, it view this system as sufficiently independent such that we can study it without regard to other cognitive faculties.

Despite its success stories, there is something missing in this approach that fundamentally limits the scope of what we can learn about human memory.

At this point, a much more fruitful question to ask would be...
What is the purpose of memory? What function does it serve? Given this function, what qualities should such a memory system posses in order to support it?

An obvious answer that is in line with the structural view would be that “Memory is for remembering. Memory is for storing and retrieving information.”

An yet, remembering in and of itself is not a particularly useful endeavor for an organism that is trying to survive. In my mind...
Memory is not for remembering – it is for thinking. It is for thinking, reasoning and problem-solving. Memory allows organisms to adapt to their environment. It allows us to make predictions based on prior knowledge and to use those predictions to more efficiently navigate the physical, social, emotional and professional worlds. It allows us to know what is edible and what is not, but more importantly, to act in accordance with that knowledge.
What I want to argue is that this function of memory is not incidental to its properties. It is likely that evolution has shaped memory in such a way as to allow it to perform that function more efficiently. Thus, we can learn more about memory by asking what properties does it need to have in order to support human cognition in real time.

As a case in point, in this talk I want to turn your attention to what we can learn about human memory by examining its role in supporting relational reasoning.
“The very blue THAT FILLS the whole sky of cognition”

“Yet analogies, far from being unusual cognitive gems, are mundane events, being generated several times every second, and it is through them that we manage to orient ourselves in the world.”

“Analogy is the core of human cognition”

“...it is the talent so fundamental that it fuels our minds...”

“[relational cognition is] what makes us so smart as a species...”

“It is arguably the key inherent difference between humans and other great apes.”
Relational reasoning & cognition

Relational structure & Semantic relations are implicated in:

- Category formation
- Abstraction
- Perception
- Social cognition
- Language comprehension
- Decision making

(Gentner, 2010; Gentner & Smith, 2012; Holyoak, Gentner & Kokinov, 2001; Hofstadter, 2001; Hofstadter & Sander, 2013)
If the ability to reason about relations is indeed so ubiquitous and fundamental, this invites a number of questions
If the ability to reason about relations is indeed so ubiquitous and fundamental, this invites a number of questions.
Relevant findings that I will discuss today

1. **Relational priming**  

2. **Structural priming**  

3. **The Relational Luring Effect**  
1. Unintentional relational reasoning?
Automaticity in analogy

Anallogical reasoning – a complex, intentional, and computationally expensive cognitive process? (Holyoak, 2012; Cho et al., 2007)

- Analogical mapping and inference require working memory resources (Waltz et al., 2000; Tohill & Holyoak, 2000; Cho et al, 2007)

- People cannot spontaneously find and use analogies to solve complex problems (Gick & Holyoak, 1980)

- People do not spontaneously benefit from relational similarity in LDT (Spellman et al., 2001)

Automaticity in analogy

Evidence for automaticity in analogy
- beliefs about marihuana prohibition (Blanchette & Dunbar, 2002)
- attitudes toward gay people (Perrott et al., 2005)
- text comprehension (Day & Gentner, 2007)
- problem-solving (Schunn & Dunbar, 1996; Day & Goldstone, 2011)
- thematic role assignment (Popov & Hristova, 2014)

Example from Day & Gentner (2011)

BASE STORY (parts)
(Version A) As soon as the news of her death was announced, her niece Helena mysteriously booked a flight from Amsterdam, where she also lived, off to Naples.

(Version B) As soon as the news of her death was announced, her niece Helena respectfully booked a flight from Naples, where she lived, to Amsterdam for the funeral.

TARGET STORY (parts)
Surprisingly, when the news of the death was released, Mr. van Houton’s nephew George immediately bought a ticket and flew to Rio de Janeiro.
Automaticity in analogy

Holyoak (2012):
- not due to systematic mapping and inference
- a “piecemeal” transfer based on relational priming
Relational priming:
The activation and subsequent facilitation in the processing of key relational concepts independently from the rest of the relational structure.

PIT – FRUIT (is in the center of) or PIT - STAGE (............................)

CORE - PLANET (is in the center of)

Relational priming

If relational priming is responsible for the automaticity effects in the analogy literature, it must also be automatic (secondary issue) the representation of relational information in semantic memory

Evidence is mixed

<table>
<thead>
<tr>
<th>Study</th>
<th>Task</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spellman et al. (2001)</td>
<td>Lexical decision task</td>
<td>No</td>
</tr>
<tr>
<td>Gagne (2001, 2002)</td>
<td>Sensibility task</td>
<td>Only if one word is repeated</td>
</tr>
<tr>
<td>Estes (2003), Estes &amp; Jones (2006)</td>
<td>Sensibility task</td>
<td>Yes, but only one relation was used</td>
</tr>
<tr>
<td>Hristova (2009)</td>
<td>Color-naming task</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Explaining the discrepancy

Task demands
Careful control of the degree of relational similarity
Congruence of tasks executed on the base and target pairs

OBJECTIVES

Can relational priming occur in a task that does not require relational integration?

Are relations primed:
- Unintentionally
- Without WM (experiment 2)
24 experimental trials (48 word pairs) embedded in 48 filler trials
- Within-subject design
  - 12 analogical trials
  - 12 non-analogical trials
- Between-subject counterbalancing
  - 2 groups with switched trials
- Randomized order
- 38 participants

Words pairs controlled for:
- Relational similarity (N = 84)
- Semantic similarity (N = 111)
- Global co-occurrence
- Frequency
- Length
- Orthographic neighborhood size

Results

Lexical decision times

Reaction times in ms

- Relationally similar
- Relationally dissimilar

$p = .002$

Results

34 ms [95%CI – 14-54ms] facilitation for analogically related pairs

unconscious and unintended

facilitation equal for both halves of the experiment

yet, debriefing procedures are unreliable – maybe they noticed, but don’t remember

2. Relational priming and WM?
Relational priming - Experiment 2

Will the effect be obtained under executively taxing dual-task conditions
- Three within-subject conditions
  - Single task (replication)
  - Generating fixed intervals (motor interference control)
  - Generating random intervals (executive dual-task condition)
- The 24 word pairs are split into 6 groups, matched on all variables, and assigned randomly to the three conditions
- Conditions are blocked, blocks are randomized
- Training with each task and both tasks at once

Discussion

Relations can be primed automatically, without intention, awareness or WM resources
  ◦ Participants were not instructed about relational similarity
  ◦ Majority did not notice it
  ◦ Occurred under dual-task conditions
  ◦ Effect present from the beginning of the experiment to the end
  ◦ Low relatedness proportion (16%)
  ◦ Used a wide variety of relations

Relational priming is evident even when the task does not require integration of relational information
  ◦ Knowledge of relations between words is not necessary for making a lexical decision

Implications

The cognitive system automatically integrates incoming information into a relational structure, regardless of task demands, and then uses the activated relational information in further processing.

This serves to facilitate language processing and general relational cognition.

This can help relational reasoning by facilitating:
- Relational retrieval (relations are more accessible due to pre-activation)
- Recognition of relevant relations (relational are more salient)

(Maybe) Relations have explicit, independent representations in semantic memory

Popov & Hristova (2015)
3. Does it apply to more complicated structures?
Automaticity in analogy

Holyoak (2012)
- not systematic mapping and inference
- “piecemeal” transfer based on relational priming

What task can demonstrate systematic, but implicit mapping?
- “Analogy is a prime example of role-based relational reasoning” (Holyoak, 2012)
- Thematic role assignment – sentence comprehension

Advantages of sentences for analogy stimuli

1. Thematic roles are conceptually similar to relational roles
2. The same thematic structure can generate numerous sentences with different degree of surface similarity
3. Thematic roles are often ambiguous and require interpretation - inference

How do you interpret this sentence?

“One morning I shot an elephant in my pajamas.

or

How he got into my pajamas I'll never know.”

- Groucho Marx

Prepositional Phrase Attachment Ambiguity (PPA)

The hunter watched the tourist with binoculars.


Thematic role

INSTRUMENT
[The hunter USED binoculars]

ATTRIBUTE
[The tourist HAD binoculars]

Sentence comprehension

How is syntactic parsing achieved?

Modular approach
- Syntactic module, not influenced by semantic factors
- Late-closure strategy (Frazier & Fodor, 1978).

Interactionist approach
- Syntax, semantic and pragmatics interact and mutually constrain syntactic parsing

Structural priming paradigm

Structural priming

During PRODUCTION: repeating the structure of previous utterances (Bock, 1978)

During COMPREHENSION: A tendency to interpret the structure of sentences similarly to that of previous sentences

Branigan, Pickering, & McLean (2005)

Structural ambiguity with a matching-to-picture task

“The policeman prodding the doctor with the gun”

“The waitress prodding The clown with the umbrella”
Results

Percentage instrumental interpretations

- Instrumental base
- Attributive base
Concerns

The base and the target share both their syntactic and thematic structures

Not clear which structure gives rise to structural priming

Thematic roles are said not to affect structural priming Bock, Loebell, & Morey, 1992; Bock & Loebell, 1990)

Models of structural priming as analogical mapping predicts priming of thematic roles (Goldwater, Tomlinson, Echols, & Love, 2011; Taylor, Friedman, Forbus, Goldwater, & Gentner, 2011)

Structural priming – Experiment 1

Objectives

- To dissociate the effects of syntactic and thematic structure on structural priming
- If SP is based in analogy, thematic structure must be primed in the absence of syntactic similarities
- If the analogies are automatic, it must happen without instructions to do so, and without awareness
- To test whether systematic mapping is necessary, or just relational priming

Target
- The hunter watched the alpinist with binoculars.

Base

<table>
<thead>
<tr>
<th></th>
<th>INSTRUMENT</th>
<th>ATTRIBUTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FULL STRUCTURE</td>
<td>The doctor watched the patient by using glasses.</td>
<td>The doctor watched the patient who wore glasses.</td>
</tr>
<tr>
<td>KEY ROLE ONLY</td>
<td>The doctor and the patient watched by using glasses.</td>
<td>The doctor and the patient, who wore glasses, watched.</td>
</tr>
</tbody>
</table>

Control base: The doctor watched the patient and smiled.

Procedure

BASE
TARGET
Comprehension test
1-3 Fillers

Comprehension test:
“The alpinist was watched with binoculars
Or
The alpinist with the binoculars was watched”

Stimuli
- 20 experimental trials:
  - 20 different targets
  - 100 bases
- Each Ps sees only one base per target, from equal number of groups
- Between-subject counter-balancing of base type (5 lists)
- 80 filler sentences with variable structures
- „Catch trials“
- Randomized order

40 participants

Discussion

1. Can analogical reasoning be automatic — unintentional and without awareness?

2. Can syntactic parsing be affected by non-syntactic factors?

3. Is structural priming the result of syntactic structure repetition or thematic structure repetition?

Discussion

1. Can analogical reasoning be automatic – unintentional and without awareness?
   - Ps were not instructed about the structural similarity
   - Ps did not report noticing it during debriefing
   - 22% increase in instrumental interpretations after an instrumental base ONLY when the structure is fully alignable

YES

Discussion

1. Can analogical reasoning be automatic — unintentional and without awareness? **YES**

2. Can syntactic parsing be affected by non-syntactic factors?
   - Parsing of the ambiguous PP was affected by the thematic role an unrelated object played in a analogous sentence
   - No syntactic repetition between the base and target

**YES**

Discussion

1. Can analogical reasoning be automatic – unintentional and without awareness? YES

2. Can syntactic parsing be affected by non-syntactic factors? YES

3. Is structural priming the result of syntactic structure repetition or thematic structure repetition?
   - 22% effect comparable to 19% in Branigan et al. (2005)
   - Only thematic structure is shared in this experiment, but both thematic and syntactic structures were shared in Branigan et al. (2005)

Discussion

1. Can analogical reasoning be automatic – unintentional and without awareness? **YES**
   - Is it due to relational priming? **Maybe, but probably not here.**

2. Can syntactic parsing be affected by non-syntactic factors? **YES**

3. Is structural priming the result of syntactic structure repetition or thematic structure repetition?
   **THEMATIC STRUCTURE REPETITION**

4. Does the verb need to be the same?
Popov & Hristova (in preparation).
5. How are semantic relations represented and retrieved from LTM?
Non-independent representation

- **Links between nodes in a network**  
  (e.g. Collins & Quillian, 1969; Collins & Loftus, 1975)

- **Semantic features of entities**  
  (e.g. Smith, Shobe, & Rips, 1974)

- **Transformations between entities**  
  (e.g. Leech et al, 2008)
Episodic memory models are mostly silent about it

Concerned with novel associative links, not preexisting *specific* semantic relations

TCM: Howard & Kahana, 2002;
CMRM: Polyn, Norman, & Kahana, 2009;
SAM: Raaijmakers & Shiffrin, 1981;
SAC: Reder et al., 2000;
REM: Shiffrin & Steyvers, 1997;
Some models of analogy and semantic memory – abstract, independent representations

- **Relations as predicates**
  - SME (Falkenhainer, Forbus, & Gentner, 1989)
  - LISA (Hummel & Holyoak, 1997)
  - DORA (Doumas, Hummel, & Sandhofer, 2008)
  - AMBR (Kokinov & Petrov, 2001)
  - ACT-R (Anderson & Lebiere, 1998)

- **Independent patterns of activation**
  - Rogers & McClelland (2006)
What about relational priming?

Relational priming involves
- non-mnemonic tasks
- Sequential presentation of prime and target

Not clear if STM or LTM

PIT – FRUIT
(is in the center of)

PIT - STAGE
(..........................)

CORE - PLANET
(is in the center of)
Current study

Can we get a similar effect in an episodic memory task?

Wanted to test whether:
- are relations represented independently of their constituents
- can information be retrieved relationally, rather than by entities
False memory for semantic relations?

**STUDY:**
AIRPLANE PILOT
SHIP CAPTAIN

**TEST:**
TRUCK DRIVER

P operates vehicle V

Diagram showing relationships between airplane pilot, ship captain, truck, and driver.
The Relational Luring Effect – Exp1

Study phase
1) airplane - pilot
2) horse - sand
3) beach - rider

Recognition phase
1) airplane - pilot (old pair)
2) horse - rider (recombined relational lure)
3) beach - sand (recombined nonrelational lure)
Procedure

Study phase (x21)

+  airplane pilot

1000 ms.  ➔  4000 ms.  ➔  500 ms.

Filler phase (60 s.)

Recognition phase (x21)

+  airplane pilot

1000 ms.  ➔  response  ➔  500 ms.

x3 Blocks
\[
\begin{align*}
\mu_{\text{train}} & \sim \text{Wiener}(\eta_{\text{train}}, \tau_{\text{train}}, \beta_{\text{train}}, \delta_{\text{train}}) \\
\tau_{\text{train}} & \sim \mathcal{N}(\mu_{\text{tau}}, \sigma^2_{\text{tau}}), \quad \delta_{\text{train}} \sim \mathcal{N}(\mu_{\text{delta}}, \sigma^2_{\text{delta}}), \quad \mu_{\text{tau}} \sim U(0, 1.5), \quad \sigma^2_{\text{tau}} \sim U(0, 100), \quad \eta^2 \sim U(0, 100) \\
\delta_{\text{train}} & \sim \mathcal{N}(\mu_{\text{delta}}, \sigma^2_{\text{delta}}), \quad \mu_{\text{delta}} \sim U(-10, 10), \quad \sigma^2_{\text{delta}} \sim U(0, 100) \\
\eta_{\text{train}} & \sim \mathcal{N}(\mu_{\text{eta}}, \sigma^2_{\text{eta}}), \quad \mu_{\text{eta}} \sim U(0, 100), \quad \sigma^2_{\text{eta}} \sim U(0, 100) \\
\beta_{\text{train}} & \sim \mathcal{N}(\mu_{\text{beta}}, \sigma^2_{\text{beta}}), \quad \mu_{\text{beta}} \sim U(0, 1), \quad \sigma^2_{\text{beta}} \sim U(0, 100)
\end{align*}
\]
(a) Posterior distributions for the type of pair DDM parameters

Type of pair: [ ] Non-relational [ ] Relational

Threshold (a), Bias (b), Non-decision time (c), Drift rate (d)

(b) Posterior distributions for the difference in parameters between relational and non-relational bars
The Relational Luring Effect – Exp2

Aims:
- Replicate the effect
- Increase power and difficulty to get it on false alarms
- Make the task more engaging to reduce noise and erratic responding
- Test if the effect would increase if we present more exemplars

Continuous recognition task!
The Relational Luring Effect – Exp2

Continuous recognition task
3 possible responses – new, recombined, old

Figure 4. Example trial in Exp 2. The test screen remained until response or 4000 ms. elapsed.
197 new, 165 recombined and 165 intact pairs

We presented 35 relations with up to 5 exemplars of each relation:

- NURSE HOSPITAL
- CASHIER BANK
- VENDOR SHOP
- WAITER RESTAURANT
- MECHANIC WORKSHOP
<table>
<thead>
<tr>
<th>Trial #</th>
<th>Pair</th>
<th>Trial type</th>
<th>Relation</th>
<th>Nsensp</th>
<th>Lure?</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>ring bank</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>cashier conductor</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>73</td>
<td>nurse grant</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>81</td>
<td>mechanic/oil</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>95</td>
<td>vendor old</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>109</td>
<td>weight shop</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>154</td>
<td>nurse hospital</td>
<td>supplemented</td>
<td>works in</td>
<td>0</td>
<td>Non-relational</td>
</tr>
<tr>
<td>185</td>
<td>nurse hospital</td>
<td>intact/old</td>
<td>works in</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>278</td>
<td>cashier bank</td>
<td>supplemented</td>
<td>works in</td>
<td>1</td>
<td>Relational</td>
</tr>
<tr>
<td>223</td>
<td>mechanic clothes</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>230</td>
<td>couch workshop</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>254</td>
<td>cashier bank</td>
<td>intact/old</td>
<td>works in</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>260</td>
<td>waiter night</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>366</td>
<td>both restaurants</td>
<td>new</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>341</td>
<td>vendor shop</td>
<td>supplemented</td>
<td>works in</td>
<td>2</td>
<td>Relational</td>
</tr>
<tr>
<td>374</td>
<td>vendor shop</td>
<td>intact/old</td>
<td>works in</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>421</td>
<td>waiter restaurant</td>
<td>supplemented</td>
<td>works in</td>
<td>3</td>
<td>Relational</td>
</tr>
<tr>
<td>473</td>
<td>waiter restaurant</td>
<td>intact/old</td>
<td>works in</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>506</td>
<td>mechanic workshop</td>
<td>supplemented</td>
<td>works in</td>
<td>4</td>
<td>Relational</td>
</tr>
<tr>
<td>518</td>
<td>mechanic workshop</td>
<td>intact/old</td>
<td>works in</td>
<td>4</td>
<td>-</td>
</tr>
</tbody>
</table>
Design

3 (pair type: new, old, recombined)

x

4 (number of different exemplars of the relation: 0, 1, 2, 3 or 4)
Response times (RTs) in ms.

Type of trial
- Recombined
- Intact

Number of previous exemplars

0 - non-relational lure
1, 2, 3, 4 - relational lures
Discussion

Main results:
- First empirical demonstration of a Relational Luring Effect in recognition memory
- Semantic relations have abstract independent representations in LTM
- The same representation is accessed by different exemplars
- More typical exemplars retrieve the relation more readily
Integrating semantic and episodic memory

**STUDY:**
- AIRPLANE PILOT
- SHIP CAPTAIN

**TEST:**
- TRUCK DRIVER
- ?

Diagram showing relationship between semantic and episodic memory nodes.
Implications

- Models of memory and analogy
- Unitization (Parks & Yonelinas, 2014)
  - Familiarity-based responding for associated word pairs
  - greater early (300-500ms) mid-frontal ERP old/new effect
  - left perirhinal cortex
  - (Zheng et al., 2015; Ford, Verfaellie, & Giovanello, 2010; Haskins, Yonelinas, Quamme, & Ranganath, 2008)
- Constructive memory
- „retieval gap“ / „relational gap“
Future directions

➢ Young vs Older adults
➢ Sleep and the Relational Luring Effect
➢ Does it affect recall?
➢ Neural representation of semantic relation?
➢ Does it interact with other memory effects?
  ➢ the fan effect
  ➢ the list strength effect
  ➢ semantic clustering in output
Take-home message

- Semantic relations are represented abstractly in LTM
- The same representation can retrieved unintentionally by different exemplars
- This affects associative recognition, lexical processing, language comprehension, etc
- At least sometimes this happens unintentionally and without WM

- We can gain a better understanding of memory if by studying how its properties relate to its purpose in cognition and behavior

Memory is for thinking.
Thank you for the attention!
Figure 2. Proportion of false alarms (top panel) for relational and non-relational base, and response times (bottom panel) in Experiment 1, for each type of pair, depending on whether the relational base pair was nested after (REL after INTACT) or before (REL before INTACT) the corresponding intact pair. Error bars represent ±1 SE.
<table>
<thead>
<tr>
<th>ID</th>
<th>Pair to be tested</th>
<th>Relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>floor carpet</td>
<td>is covered by</td>
</tr>
<tr>
<td>Y</td>
<td>table cloth</td>
<td>is covered by</td>
</tr>
<tr>
<td>A</td>
<td>pipe water</td>
<td>flows through</td>
</tr>
<tr>
<td>B</td>
<td>artery blood</td>
<td>flows through</td>
</tr>
</tbody>
</table>
Table 1: Studied and tested pairs from a single set for 2 different participants.

<table>
<thead>
<tr>
<th>Participant</th>
<th>ID</th>
<th>Studied pair</th>
<th>Tested pair</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td>floor carpet</td>
<td>floor carpet</td>
<td>intact</td>
</tr>
<tr>
<td>1</td>
<td>Y</td>
<td>table water</td>
<td>table cloth</td>
<td>recombined relational lure</td>
</tr>
<tr>
<td>1</td>
<td>A</td>
<td>pipe cloth</td>
<td>pipe water</td>
<td>recombined non-relational lure</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>pipe water</td>
<td>pipe water</td>
<td>intact</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>artery cloth</td>
<td>artery blood</td>
<td>recombined relational lure</td>
</tr>
<tr>
<td>2</td>
<td>Y</td>
<td>table blood</td>
<td>table cloth</td>
<td>recombined non-relational lure</td>
</tr>
</tbody>
</table>