

Les animations dans les interfaces

Défis, opportunités et nouveaux usages

S. Malacria



Transparents réalisés par F. Chevalier

Master 2 IVI

Récapitulatif



Dans les cours précédents, vous avez

- Appris ce qu'était la **visualisation d'information**
- Appris quels étaient les **avantages** de l'infovis
- Vu et critiqué des **exemples** historiques et récents
- Appris qu'on ne peut **pas toujours faire confiance** à ce que l'on voit

- Appris quel est le **pipeline** pour transformer des données en représentation visuelle
- Appris à **connaître et caractériser** vos données
- Appris les **composantes basiques** de la visualisation

- Commencé à créer votre propre visualisation

Récapitulatif



Cette semaine vous allez

- Apprendre à quoi peuvent servir les animations
- Apprendre différents types de transitions
- Apprendre les difficultés d'étudier et concevoir les animations
- Apprendre des principes de conception

- Voir différents exemples d'utilisation d'animations

- Continuer à créer votre propre visualisation

Quand les interfaces s'animent...

ANIMATIONS

Animations

... peuvent être très ennuyeuses

Firefox prevented this site from opening a pop-up window.

The World's W.

Gratuitous use of frames is a common mistake of web designers. Many older browsers do not support frames. They disrupt the flow of the website and can be difficult to anticipate where a page may

As you can see, this text is difficult to read. There needs to more contrast between the background color and the text color. [Here's another example](#) of a poor choice of a background/text color and size.

Keep your backgrounds simple. White or light colors usually work best. Your background should not compete with the content of the page for the users attention. If you would like to use a background picture, select a picture that uses muted colors or format your picture as a watermark. Select text colors which will contrast well with the background picture.

Constantly running animations can be distracting when used excessively. There should be no more than one animated object in your view at any time. Also in this category are excessive, large, flashing & obnoxious advertisements.



Animations

... mais peuvent aussi être très utiles

Item 09273

Item 04324

Item 21845

Item 02164

Item 19965

Item 15772

Item 14788

Animations

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Item 15772

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Item 14788

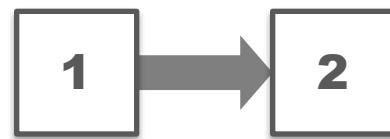
Durée : 300 ms

Animations

Transitions animées

| |
|------------|
| Item 09273 |
| Item 04324 |
| Item 21845 |
| Item 02164 |
| Item 19965 |
| Item 15772 |
| Item 14788 |

État 1



| |
|------------|
| Item 09273 |
| Item 04788 |
| Item 04324 |
| Item 21845 |
| Item 02164 |
| Item 19965 |
| Item 15772 |

État 2

Animations

Question de transition

Item 09273

Item 04324

Item 21845

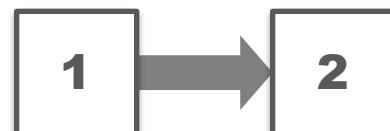
Item 02164

Item 19965

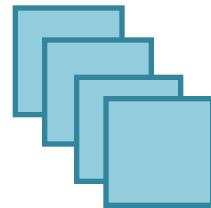
Item 15772

Item 14788

État 1



**Images
intermédiaires**



Item 09273

Item 04788

Item 04324

Item 21845

Item 02164

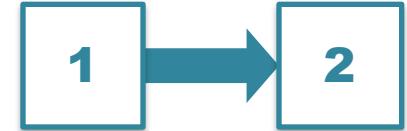
Item 19965

Item 15772

État 2

Animations

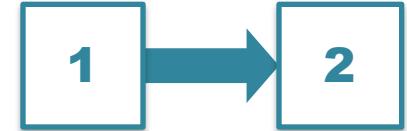
Transition abrupt



- Item 09273
- Item 04324
- Item 21845
- Item 02164
- Item 19965
- Item 15772
- Item 14788

Animations

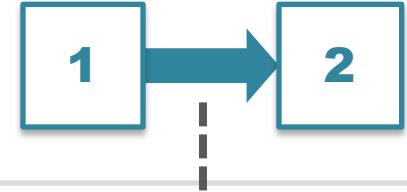
Transition abrupt



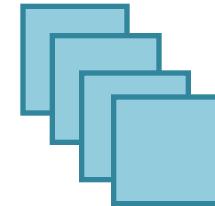
- Item 09273
- Item 04788
- Item 04324
- Item 21845
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- Item 19965
- Item 15772

Animations

Transition animée



- Item 09273
- Item 04324
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- Item 15772
- Item 14788



Animations

Rupture

1

2

Animations

Rupture

1

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| Labels ▾ | More actions ▾ | Refresh | 1 - 50 |
| Select: All, None, Read, Unread, Starred, Unstarred | | | |
| <input type="checkbox"/> | Google Calendar | » me | Reminder: Sujet de thèse @ Thu Ma |
| <input type="checkbox"/> | Daisy, Pierre (2) | » me-inr | cours de chinois le samedi 13/03 |
| <input type="checkbox"/> | Philippe Dague | | [Permanents] Séminaire Katia Jaffres-Ru |
| <input type="checkbox"/> | Google Calendar | » me | Reminder: Pilote torus desktop @ Thu |
| <input type="checkbox"/> | Frederic, Philippe (2) | | Locaux : rapport final - Bonjour à vous de |
| <input type="checkbox"/> | Jean-Daniel Fekete | » me | InfoVis 2010 Program Committee Du |
| <input type="checkbox"/> | Helene Milome | | [aviz] [Fwd: [aer-saclay] Sortie bowling] - Mer |
| <input type="checkbox"/> | Pôle Formation des Perso. | | Formations aux logiciels libres et Apple - pro |
| <input type="checkbox"/> | Stéphane, Olivier, me (6) | » me | Torus XP3 - Après-midi pour moi, n'imp |
| <input type="checkbox"/> | Helene Milome | | [Fwd: [aer-saclay] [DIGITEO]livrets Digitéo + |
| <input type="checkbox"/> | Emmanuel .. me (7) | » me | Fwd: Gift for Caroline's son - yes On 11 |
| <input type="checkbox"/> | Manuel GEA BMSystems | | [aviz] Bio-Modeling Systems is pleased to an |

Animations

Rupture

1

Animations Rupture

1

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[Compose Mail](#)[Inbox \(7\)](#)[Buzz](#)[Starred](#)[Sent Mail](#)[Drafts \(176\)](#)[-- candidats](#)[-- pratique](#)[Apartments in Berlin](#)[IFIPS2010](#)[IHM09 Demo Submissi](#)[me-iri](#)[UIST09 Demos](#)[23 more▼](#)[Contacts](#)[Tasks](#)[Pierre Dragicevic](#)

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Select: All, None, Read, Unread, Starred, Unstarred

| | | | | |
|-------------------------------------|--|---------------------------|----------|--|
| <input type="checkbox"/> | | Petra Isenberg | » me | Weekend dinner? - Hey Pierre, Want |
| <input type="checkbox"/> | | Petra Isenberg | » me | Urgent: Travel confirmation - Hey, S |
| <input checked="" type="checkbox"/> | | Google Calendar | » me | Reminder: Sujet de thèse @ Thu Ma |
| <input type="checkbox"/> | | Daisy, Pierre (2) | » me-inr | cours de chinois le samedi 13/03 |
| <input type="checkbox"/> | | Philippe Dague | | [Permanents] Séminaire Katia Jaffres-Ru |
| <input type="checkbox"/> | | Google Calendar | » me | Reminder: Pilote torus desktop @ Thu |
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| <input type="checkbox"/> | | Jean-Daniel Fekete | » me | InfoVis 2010 Program Committee Du |
| <input type="checkbox"/> | | Helene Milome | | [aviz] [Fwd: [aer-saclay] Sortie bowling] - Mer |
| <input type="checkbox"/> | | Pôle Formation des Perso. | | Formations aux logiciels libres et Apple - proj |
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| <input type="checkbox"/> | | Helene Milome | | [Fwd: [aer-saclay] [DIGITEO]livrets Digitéo + |

Animations

Rupture

1

2

Animations

Rupture

1

2



Animations

Rupture

1

2



Animations

Rupture

1

2



Animations

Rupture

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Animations

Rupture

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Animations

Rupture

1

2



Animation

Types de transitions

Animation

Types de transitions

- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar
- ★ Frederic, Philippe (
- ★ Jean-Daniel Fekete



- ★ Petra Isenberg
- ★ Petra Isenberg
- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar



- ★ Petra Isenberg
- ★ Petra Isenberg
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- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

Transition animée



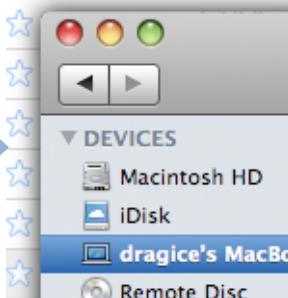
- ★ Google Calendar
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- ★ Philippe Dague
- ★ Google Calendar
- ★ Frederic, Philippe (
- ★ Jean-Daniel Fekete



- ★ Petra Isenberg
- ★ Petra Isenberg
- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

Transition abrupte

- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar
- ★ Frederic, Philippe (
- ★ Jean-Daniel Fekete



- ★ Petra Isenberg
- ★ Petra Isenberg
- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

Transition cachée



Animation

Types de transitions

- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar
- ★ Frederic, Philippe (
- ★ Jean-Daniel Fekete



- ★ Petra Isenberg
- ★ Petra Isenberg
- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

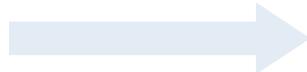


- ★ Petra Isenberg
- ★ Petra Isenberg
- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

Transition animée



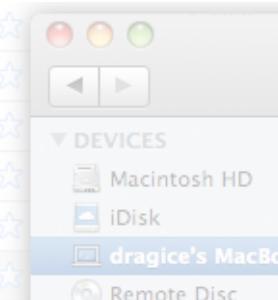
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- ★ Daisy, Pierre (2)
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- ★ Frederic, Philippe (
- ★ Jean-Daniel Fekete



- ★ Petra Isenberg
- ★ Petra Isenberg
- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

Transition abrupte

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- ★ Jean-Daniel Fekete



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- ★ Google Calendar
- ★ Daisy, Pierre (2)
- ★ Philippe Dague
- ★ Google Calendar

Transition cachée

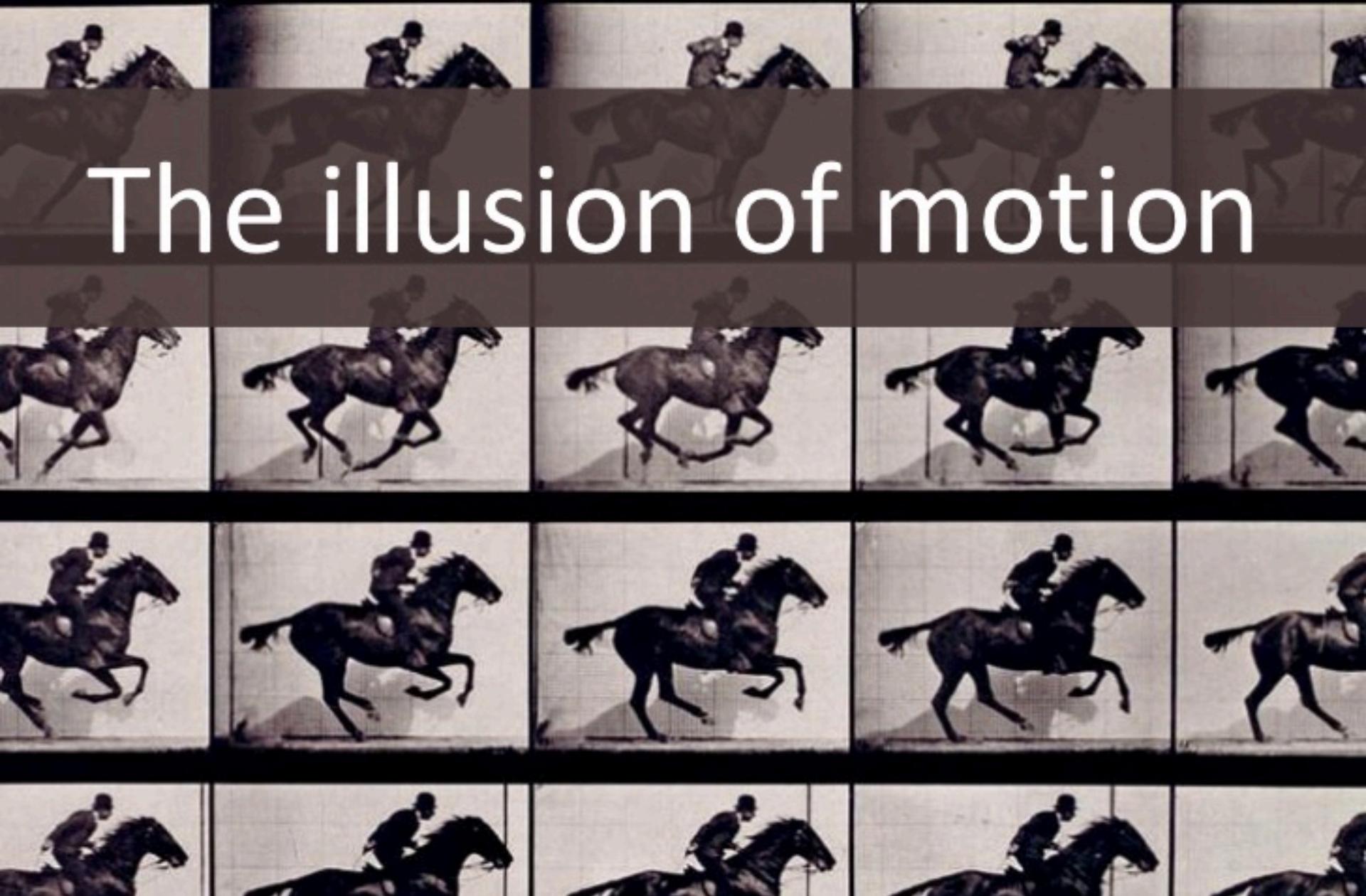


Questions de recherche

LES TRANSITIONS ANIMÉES

Les transitions animées

The illusion of motion

The image consists of a 4x5 grid of 20 small square frames. Each frame depicts a horse and a jockey in a different stage of their race. The sequence starts with the horse and jockey at a standstill on the left, and progresses through various stages of running and jumping, ending with the horse rearing up on its hind legs on the right. The frames are arranged in four rows and five columns, with a black border around the entire grid.

Les transitions animées

Questions de recherche

Sont-elles utiles ?

- Expériences contrôlées

Comment les réaliser ?

- Implicite vs. explicite

Comment les concevoir ?

- Règles de conception

Comment mieux les exploiter ?

- Nouveaux usages et applications

Les transitions animées

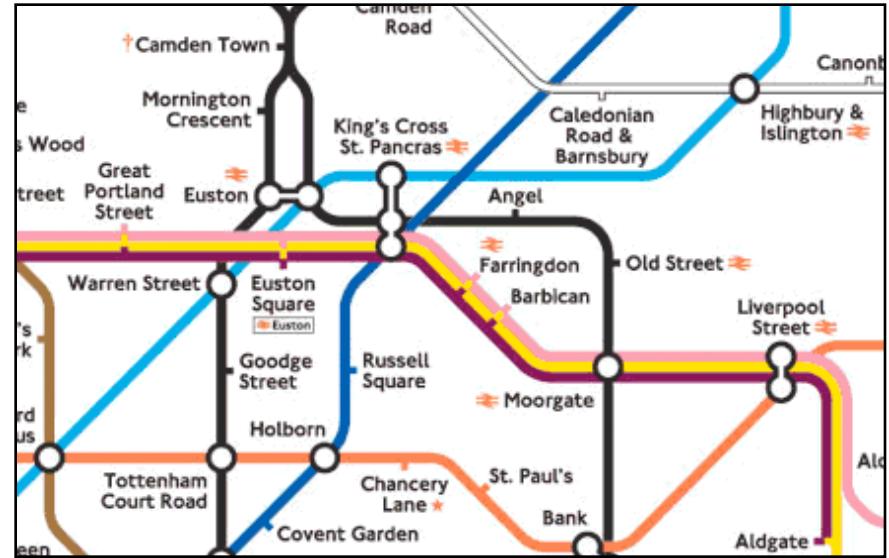
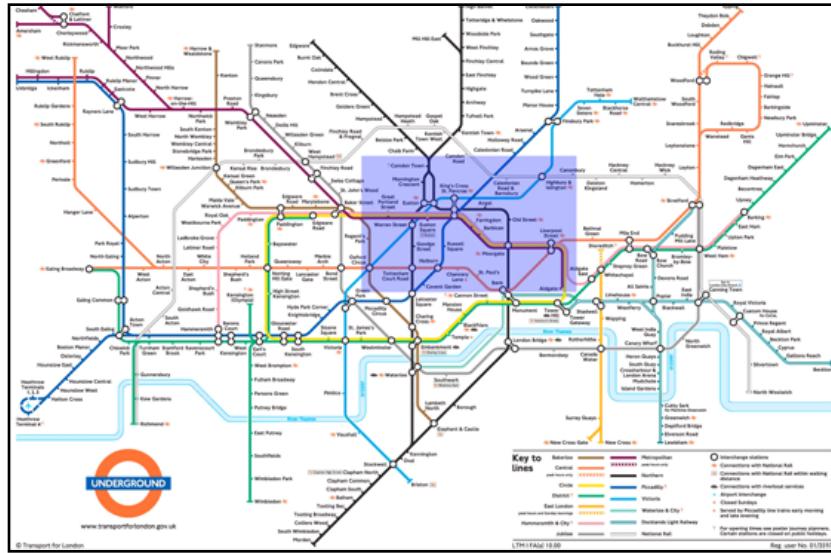
Sont-elles utiles ?

The supporting power being estimated at 2500 pounds, and the united weights of the party amounting only to about 1200, there was left a surplus of 1300, of which again 1200 was exhausted by ballast, arranged in bags of different sizes, with their respective weights marked upon them -- by cordage, barometers, telescopes, barrels containing provision for a fortnight, water-casks, cloaks, carpet-bags, and various other indispensable matters, including a coffee-warmer, contrived for warming coffee by means of slack-lime, so as to dispense altogether with fire, if it should be judged prudent to do so. All these articles, with the exception of the ballast, and a few trifles, were suspended from the hoop overhead. The car is much smaller and lighter, in proportion, than the one appended to the model. It is formed of a light wicker, and is wonderfully strong for so frail looking a machine. Its rim is about 4 feet deep. The rudder is also very much larger, in proportion, than that of the model; and the screw is considerably smaller. The balloon is furnished besides with a grapnel, and a guide-rope, which latter is of the most indispensable importance. A few words, in explanation, will here be necessary for such of our readers as are not conversant with the details of aerostation.

As soon as the balloon quits the earth, it is subjected to the influence of many circumstances tending to create a difference in its weight; augmenting or diminishing its ascending power. For example, there may be a deposition of dew upon the silk, to the extent, even, of several hundred pounds; ballast has

Les transitions animées

Sont-elles utiles ?

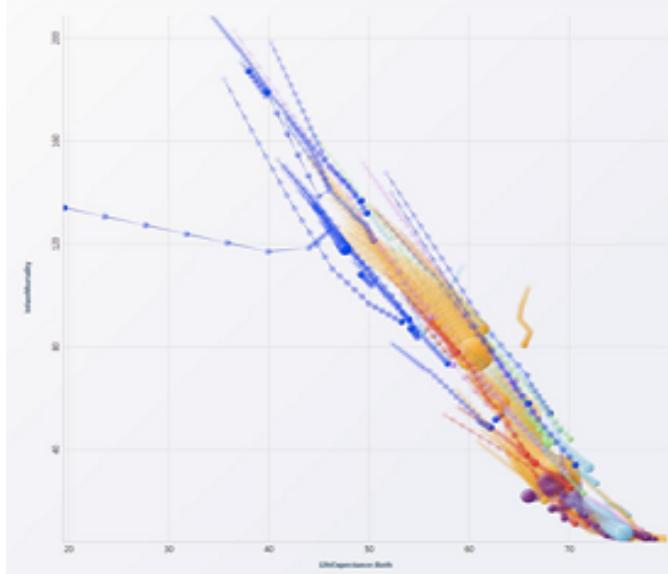


(Shanmugasundaram & Irani, 2008)

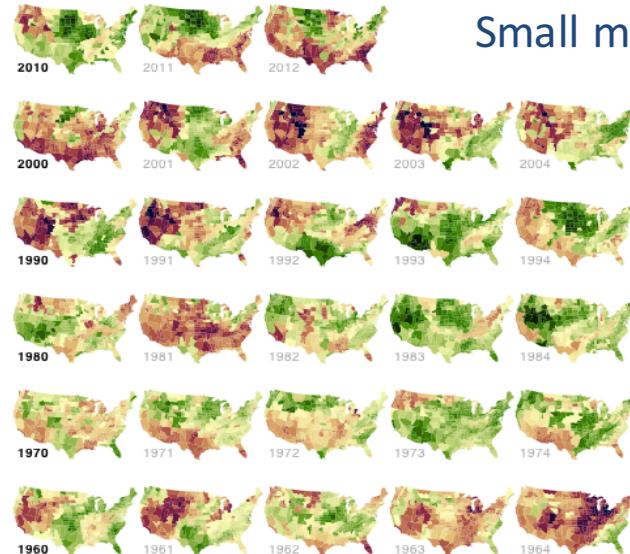
Les transitions animées

Difficile de les évaluer

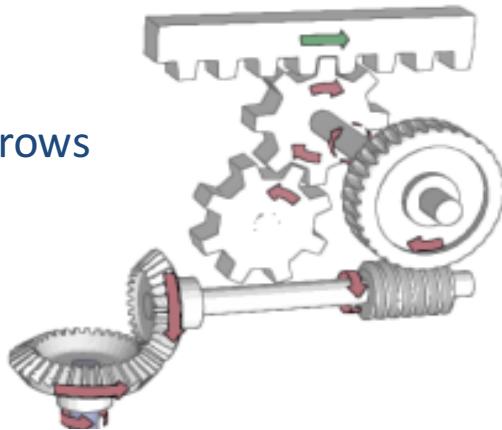
Traces



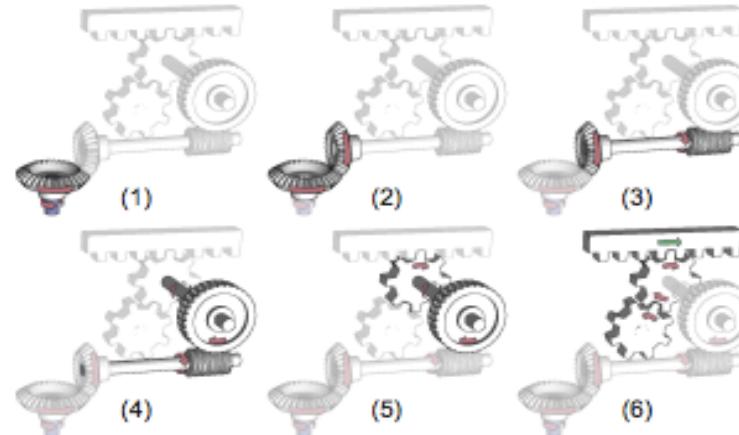
Small multiples



Arrows

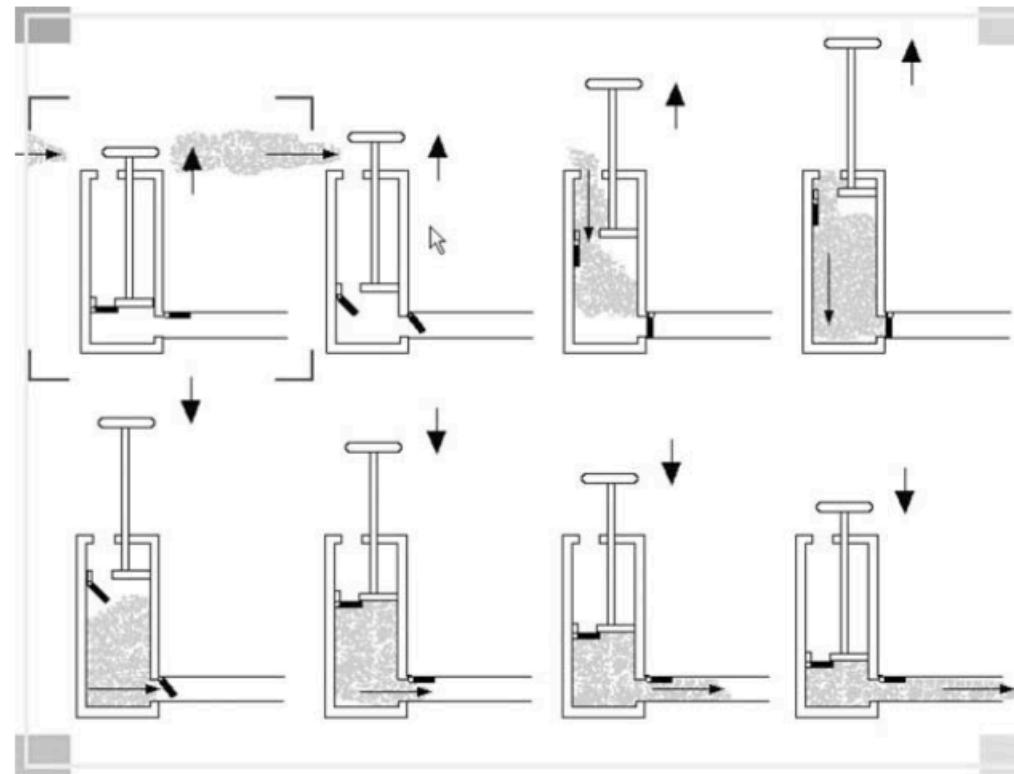


Causal chain



Les transitions animées

Difficile de les évaluer



(Kim et al., 2007)

Les transitions animées

Questions de recherche

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Comment les réaliser ?

- Implicite vs. explicite

Comment les concevoir ?

- Règles de conception

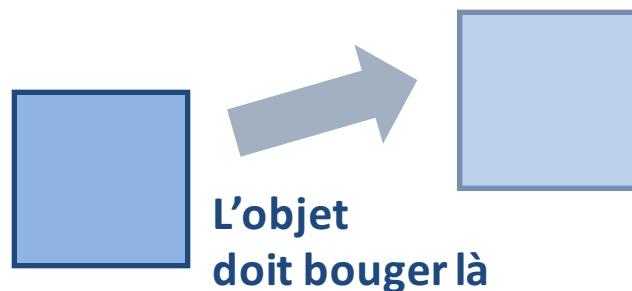
Comment mieux les exploiter ?

- Nouveaux usages et applications

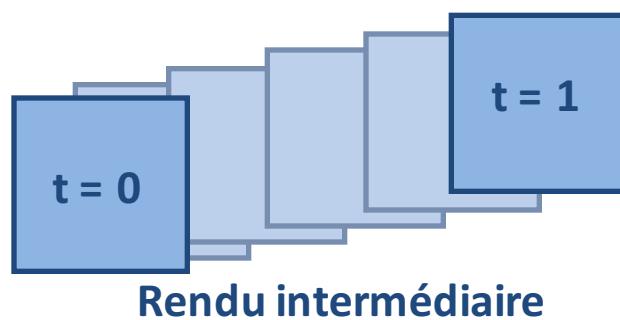
Les transitions animées

Comment les réaliser ?

Approche explicite (mécanique)



Approche implicite (paramétrique)



Les transitions animées

Questions de recherche

Sont-elles utiles ?

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Comment les réaliser ?

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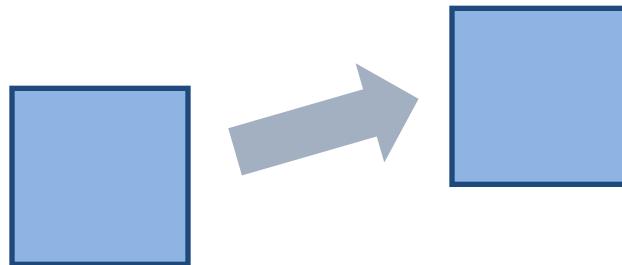
Comment mieux les exploiter ?

- Nouveaux usages et applications

Les transitions animées

Questions de conception

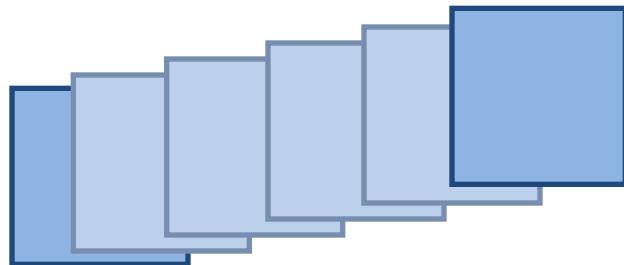
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

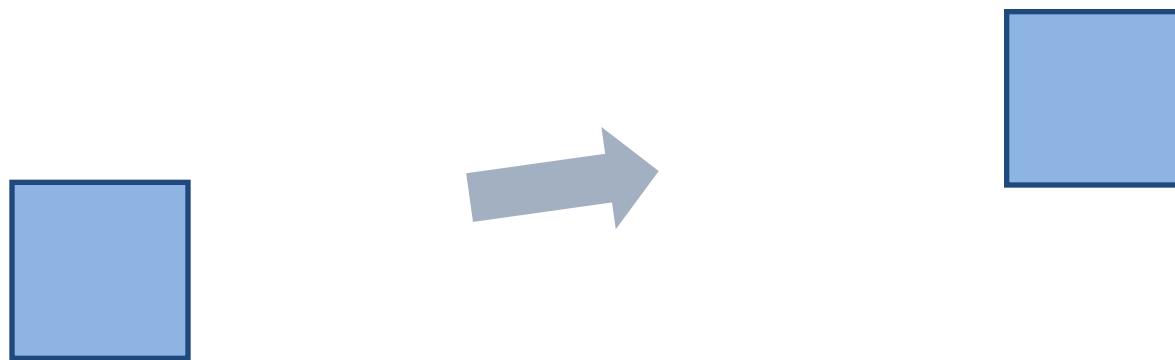
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

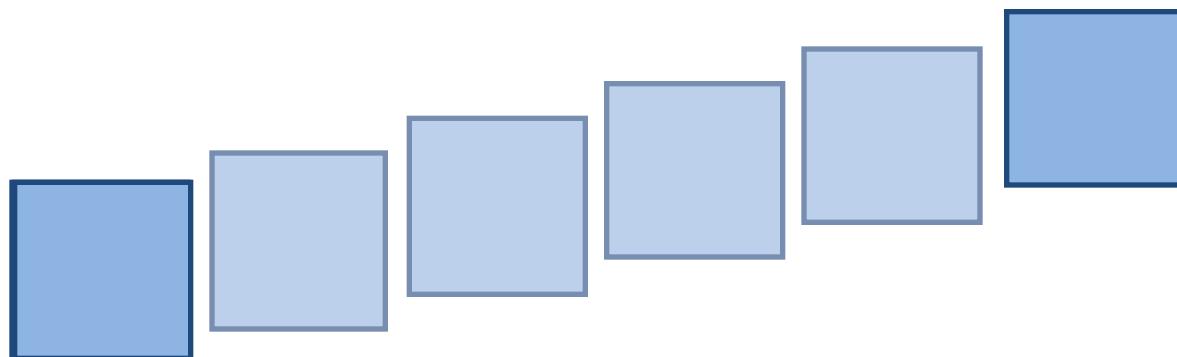
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

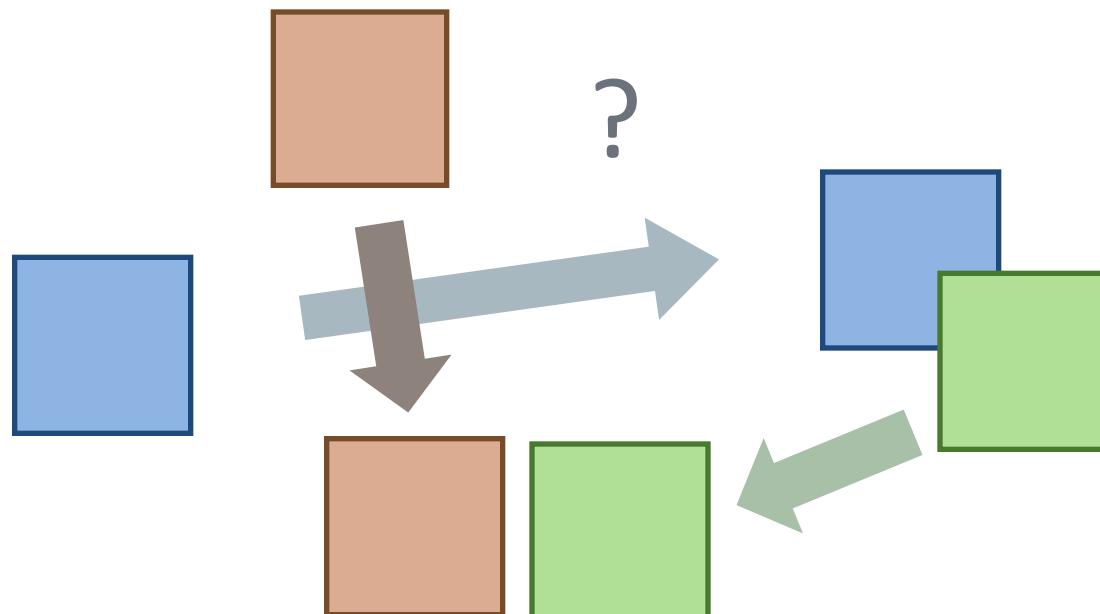
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

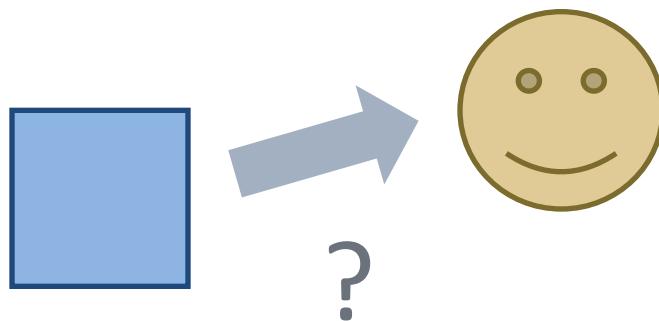
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

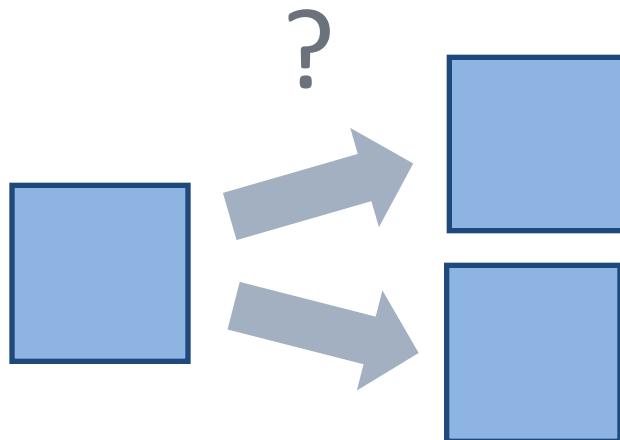
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

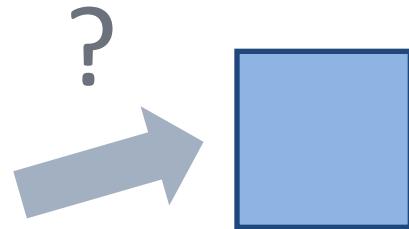
- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

Questions de conception

- Quelle est la bonne durée ?
- Quelle est la bonne transition ?



Les transitions animées

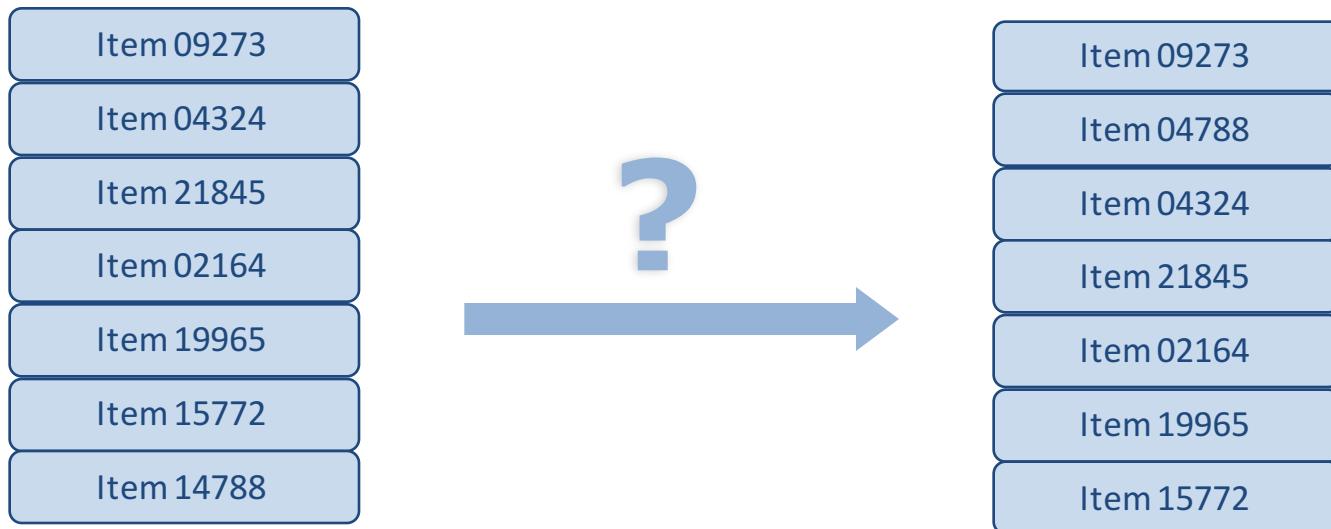
Questions de conception

- Quelle est la bonne durée ?
- Quelle est la bonne transition ?

Les transitions animées

Questions de conception

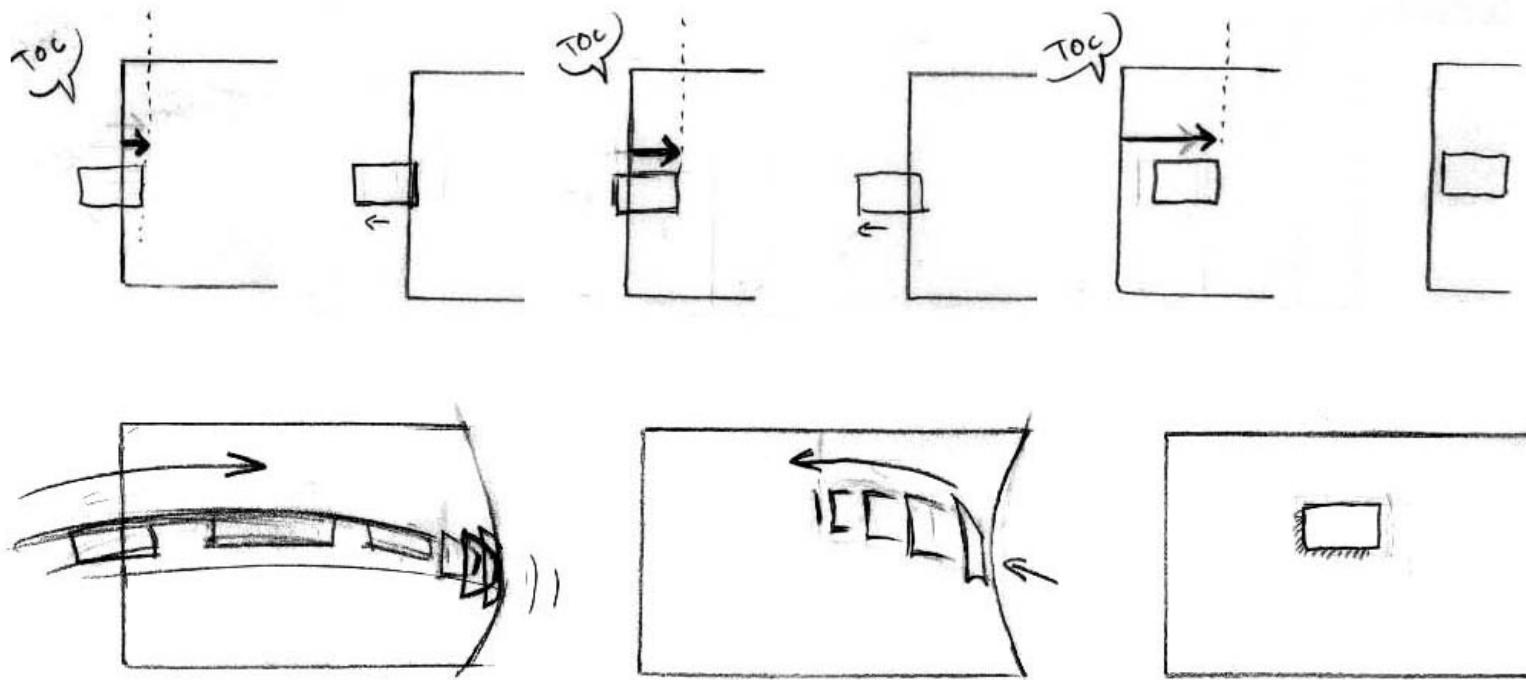
- Quelle est la bonne durée ? (< 1 sec)
- **Quelle est la bonne transition ?**



Les transitions animées

Véhicule la bonne information

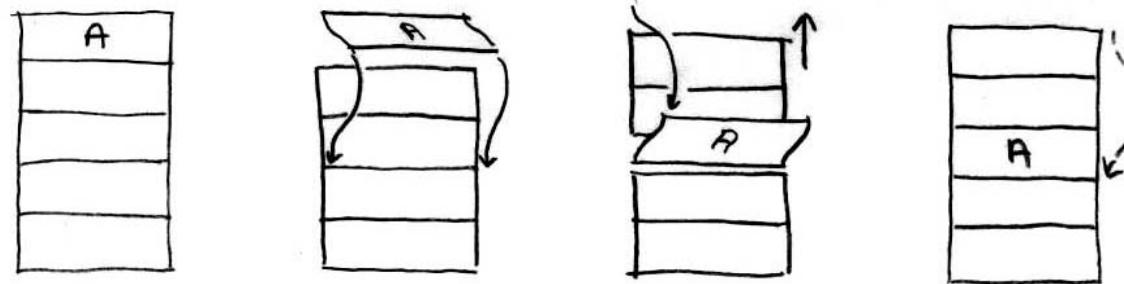
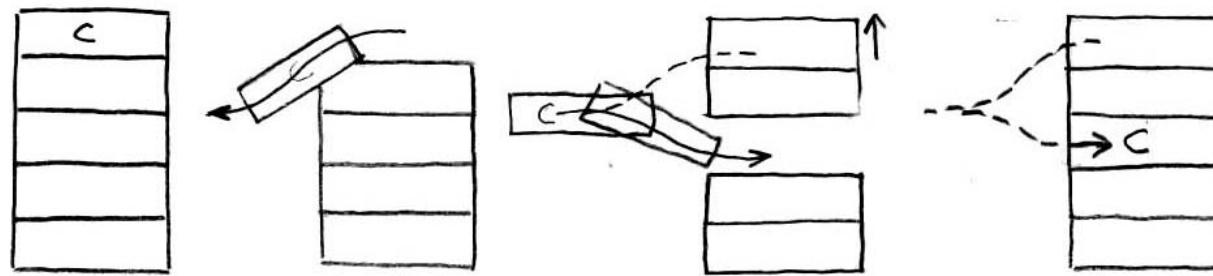
Exemple: un objet apparaît



Les transitions animées

Véhicule la bonne information

Exemple: les listes typées



Les transitions animées

Règles de conception

Congruence

l'information véhiculée par l'animation doit être perçue avec précision

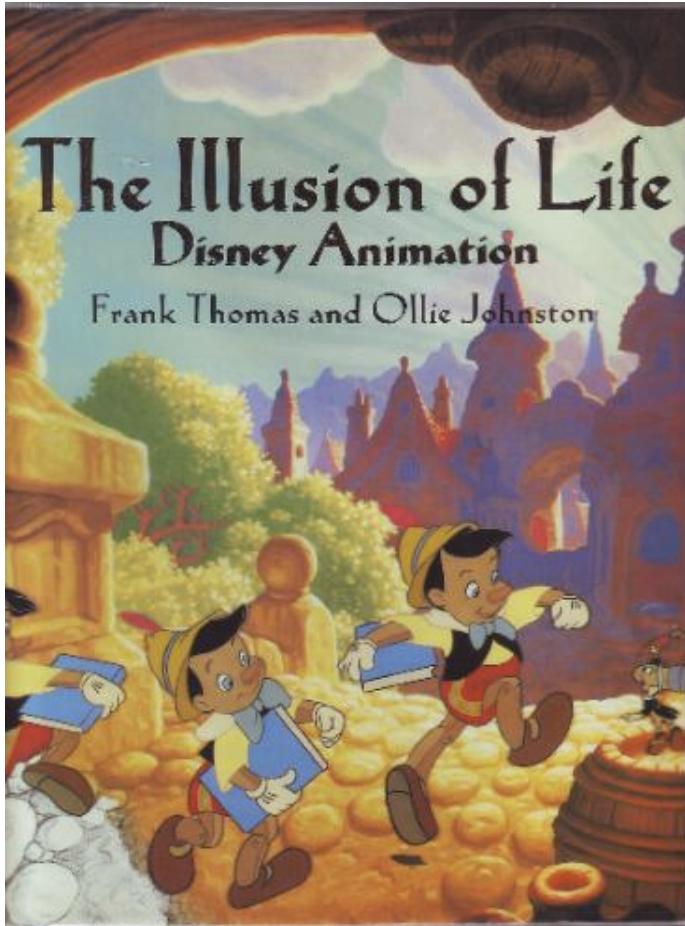
Appréhension

l'animation doit être prédictible et compréhensible

(Tversky et al., 2002)

Les transitions animées

Principes de conception

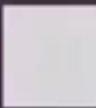


"The illusion of Life" by Disney, 1981
(Lasseter, SIGGRAPH'87)

1. Compression et étirement
2. Anticipation
3. Mise en relief
4. Toute l'action d'un coup / partie par partie
5. Continuité et chevauchement
6. Ralentissement en début et fin
7. Trajectoire arquée
8. Action secondaire
9. Cohérence physique
10. Exagération
11. Qualité du dessin
12. Charisme

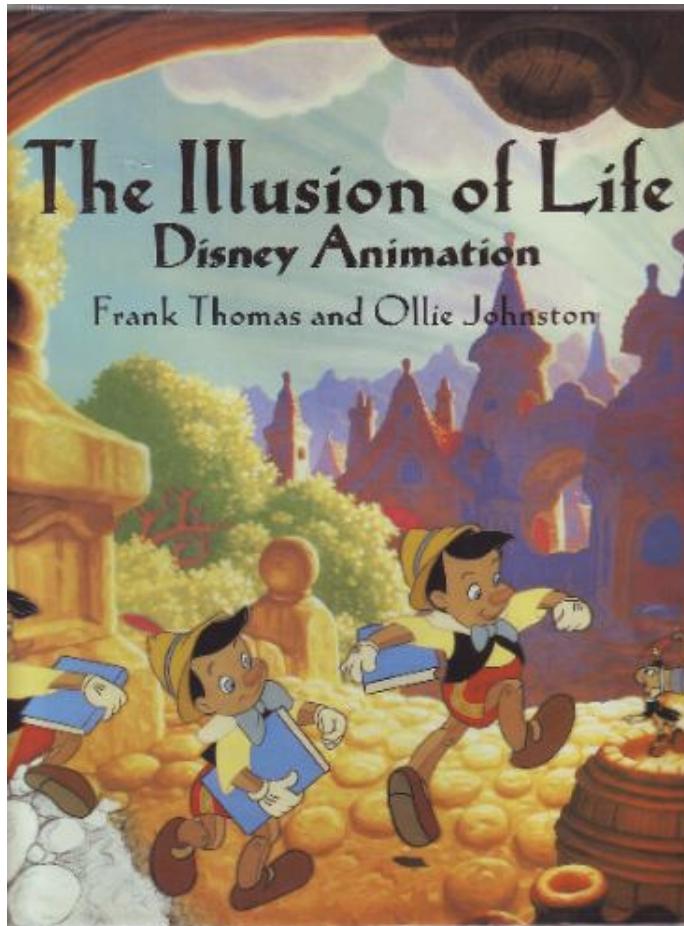
Les transitions animées

Règles de conception



Les transitions animées

Règles de conception

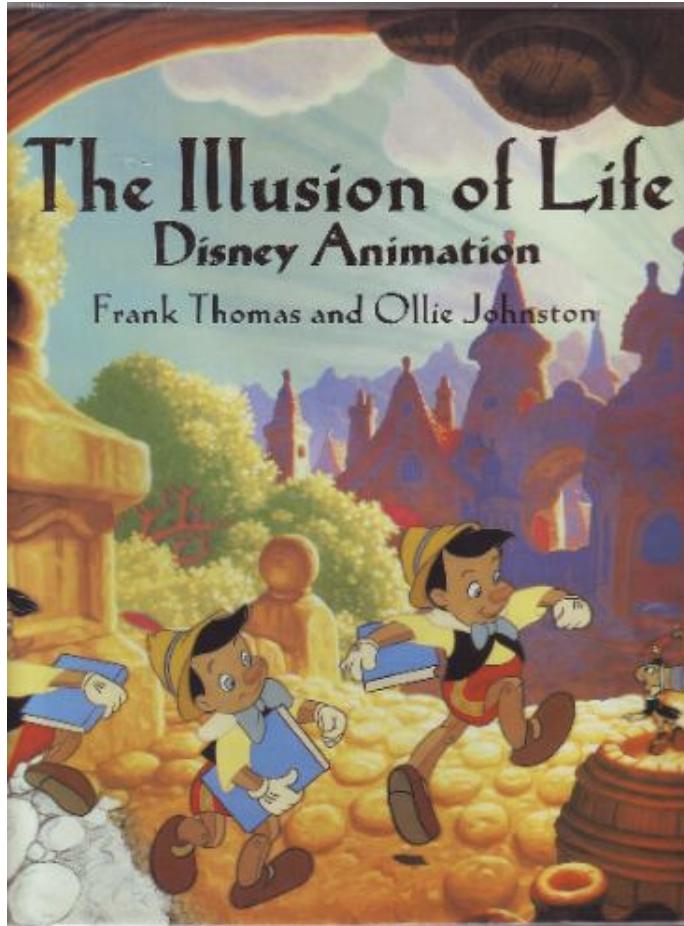


"The illusion of Life" by Disney, 1981
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1. Compression et étirement
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8. Action secondaire
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10. Exagération
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Les transitions animées

Règles de conception

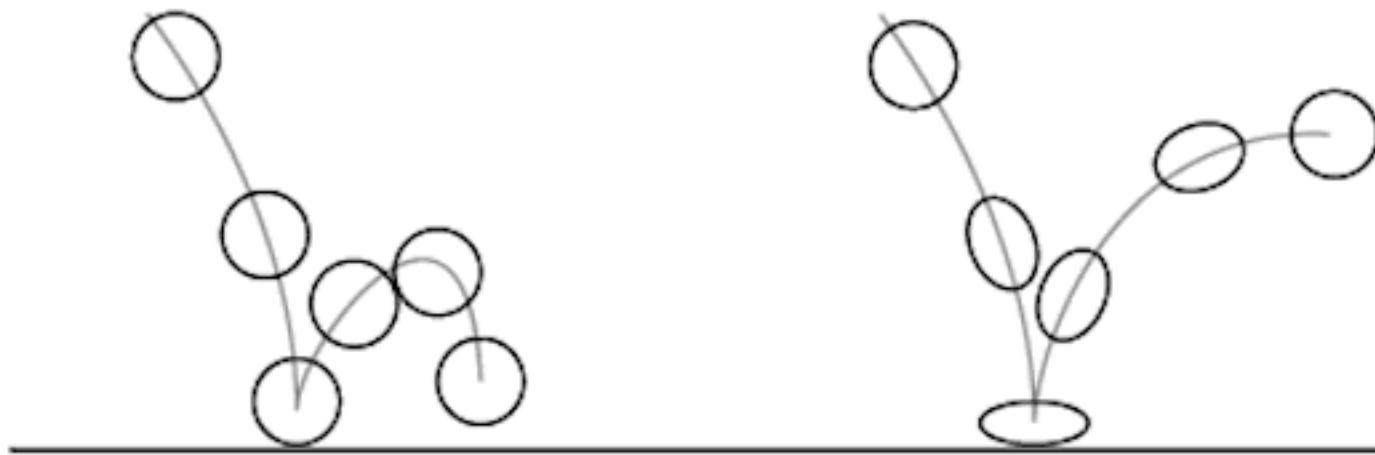


"The illusion of Life" by Disney, 1981
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1. **Compression et étirement**
2. Anticipation
3. Mise en relief
4. Toute l'action d'un coup / partie par partie
5. Continuité et chevauchement
6. Ralentissement en début et fin
7. Trajectoire arquée
8. Action secondaire
9. Cohérence physique
10. Exagération
11. Qualité du dessin
12. Charisme

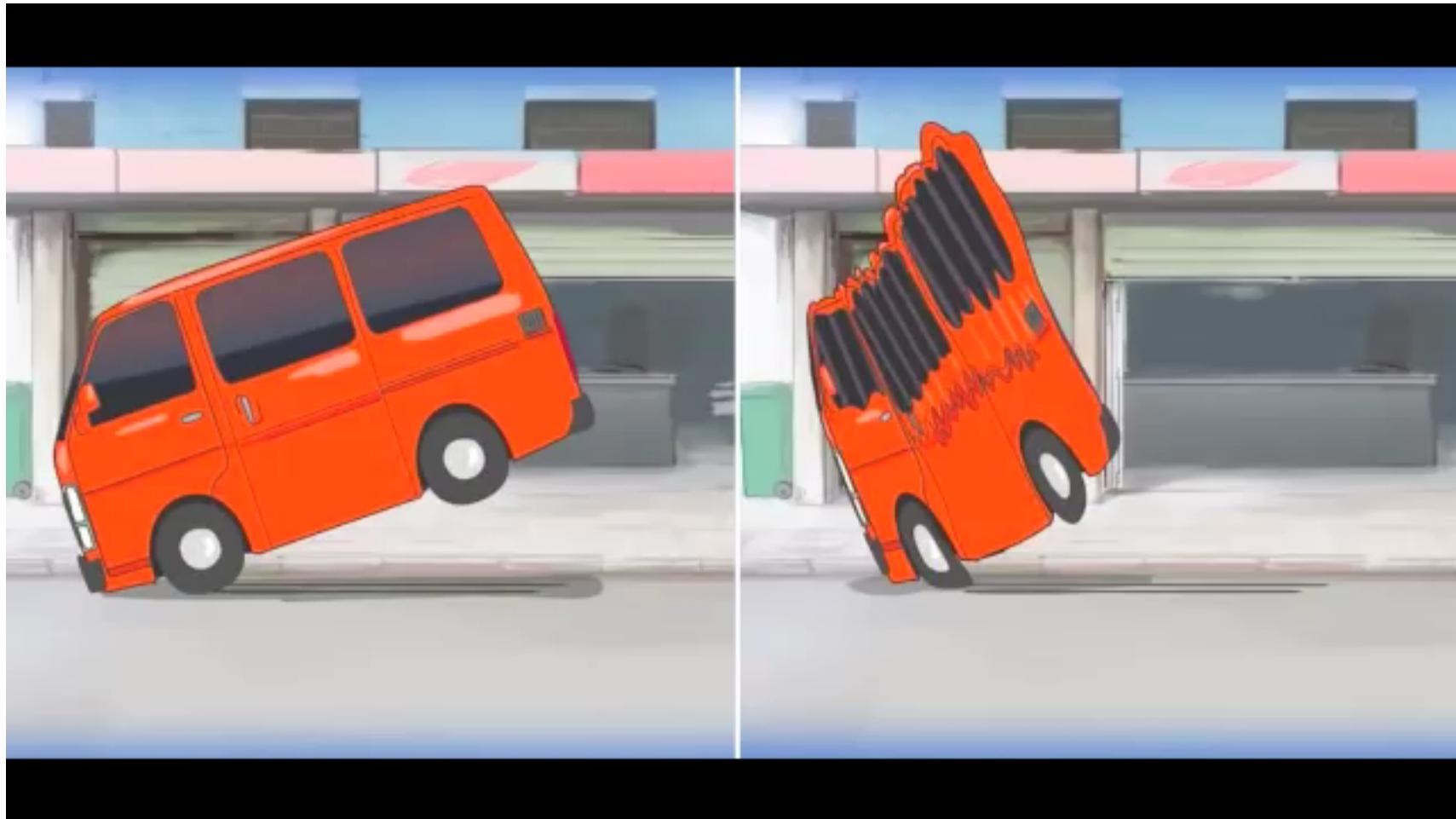
Les transitions animées

Compression et étirement



Les transitions animées

Compression et étirement



Les transitions animées

Compression et étirement

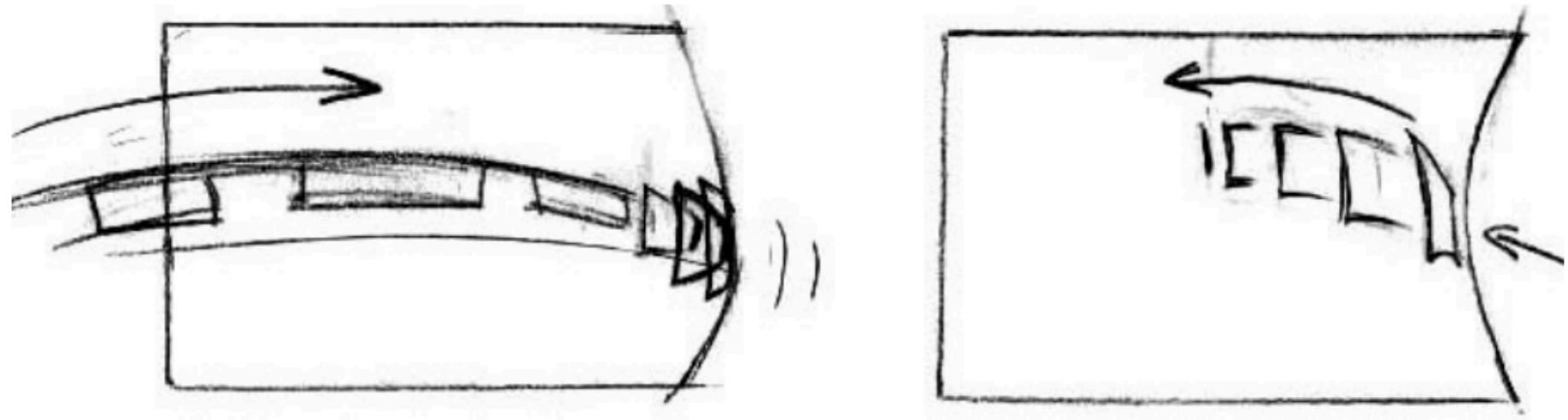
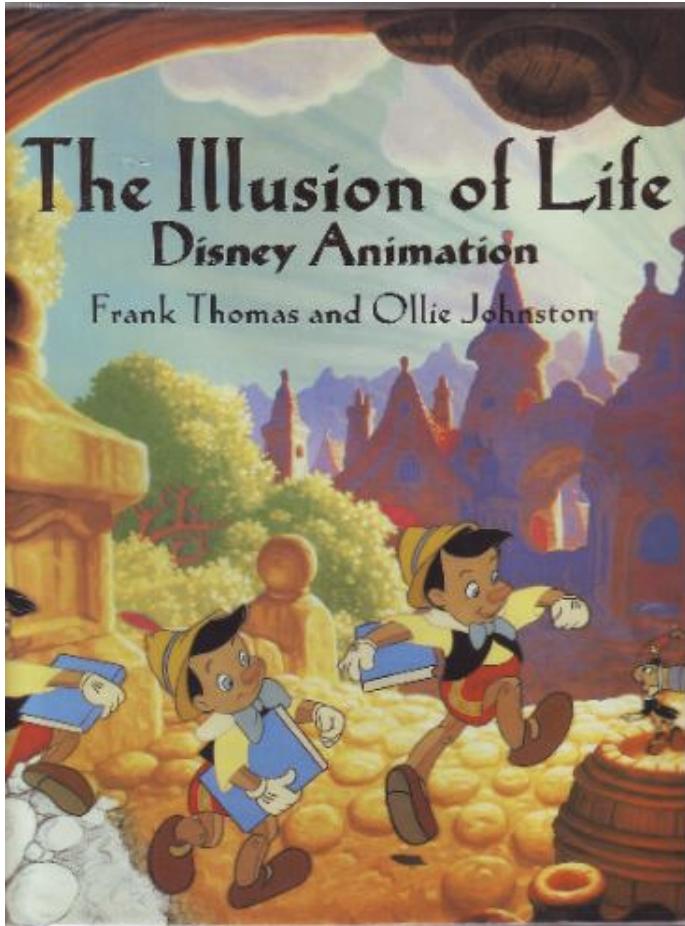


Figure 9 : story-board d'animatrice illustrant un effet d'apparition « fracassante » d'un objet

Les transitions animées

Règles de conception



"The illusion of Life" by Disney, 1981
(Lasseter, SIGGRAPH'87)

1. Compression et étirement
2. Anticipation
3. Mise en relief
4. Toute l'action d'un coup / partie par partie
5. **Continuité et chevauchement**
6. Ralentissement en début et fin
7. Trajectoire arquée
8. Action secondaire
9. Cohérence physique
10. Exagération
11. Qualité du dessin
12. Charisme

Les transitions animées

Continuité et chevauchement

Tout en même temps



Les transitions animées

Continuité et chevauchement

Tout en même temps



Séquence



Les transitions animées

Continuité et chevauchement

Tout en même temps



Chevauchement



Séquence



Les transitions animées

Continuité et chevauchement



Show targets

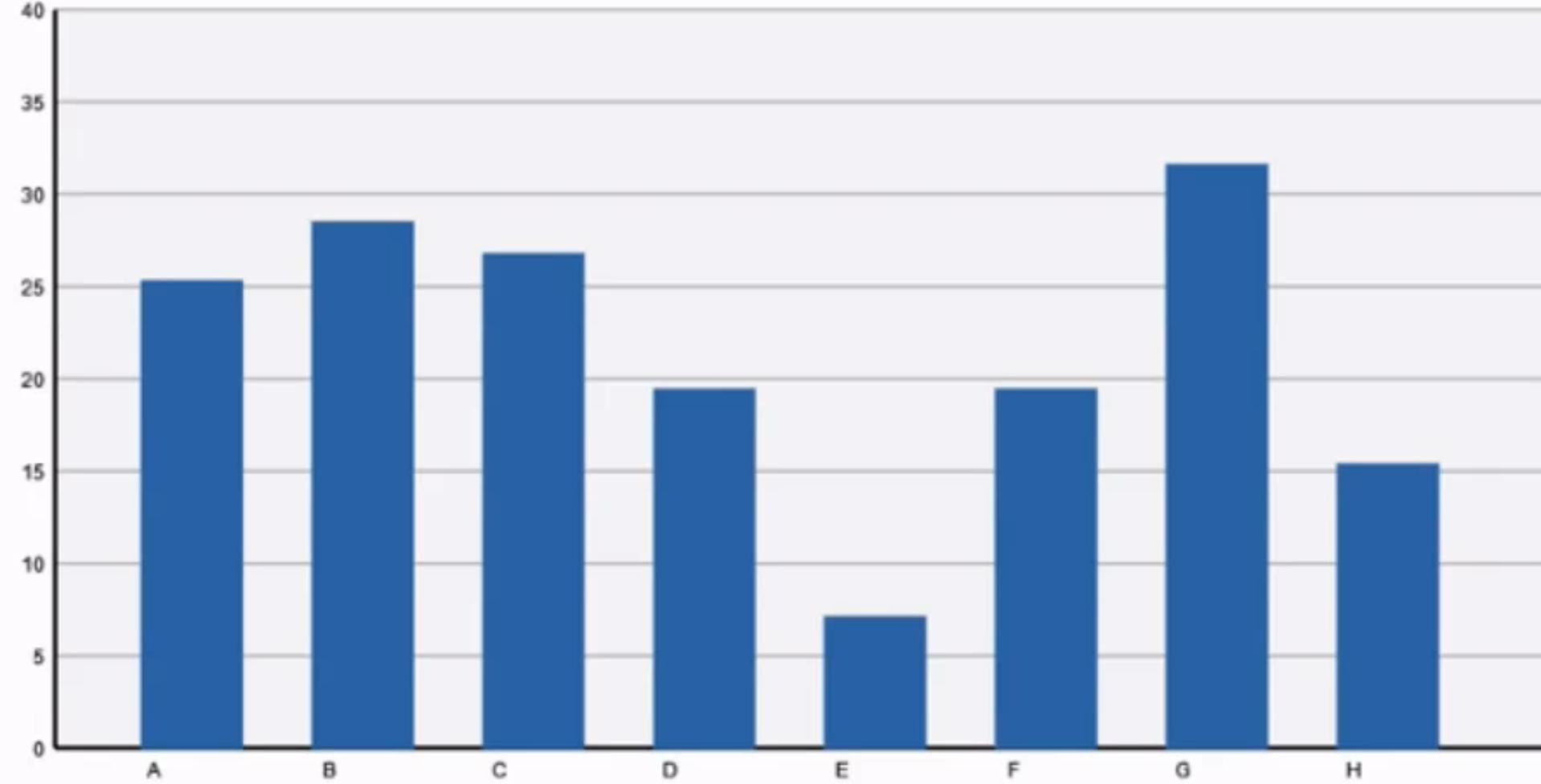
Start animation

Select targets

Show solution

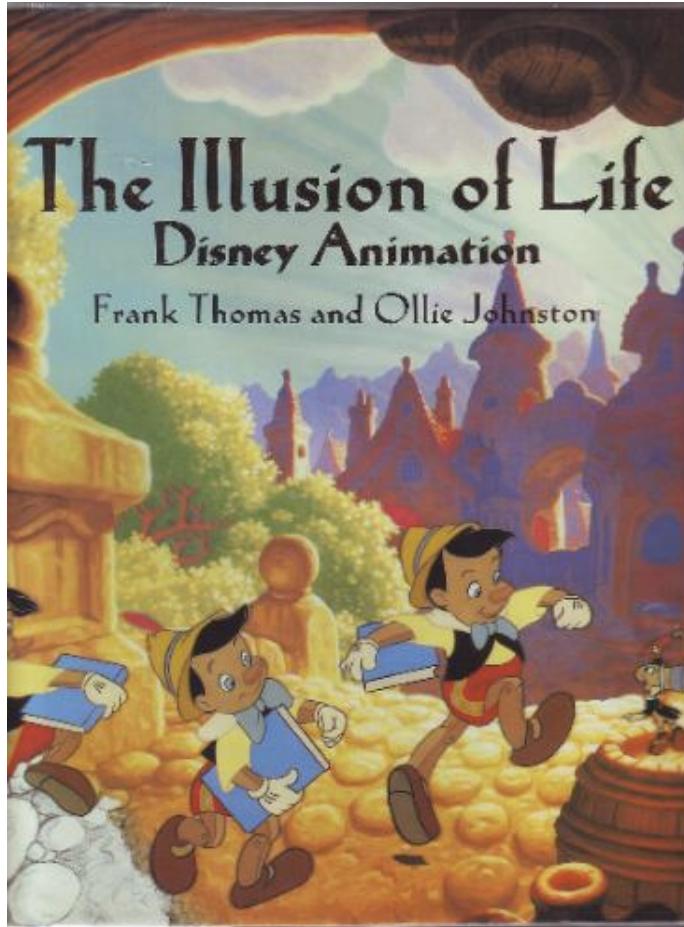
Les transitions animées

Staged animations



Les transitions animées

Règles de conception



"The illusion of Life" by Disney, 1981
(Lasseter, SIGGRAPH'87)

1. Compression et étirement
2. Anticipation
3. Mise en relief
4. Toute l'action d'un coup / partie par partie
5. Continuité et chevauchement
6. **Ralentissement en début et fin**
7. Trajectoire arquée
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9. Cohérence physique
10. Exagération
11. Qualité du dessin
12. Charisme

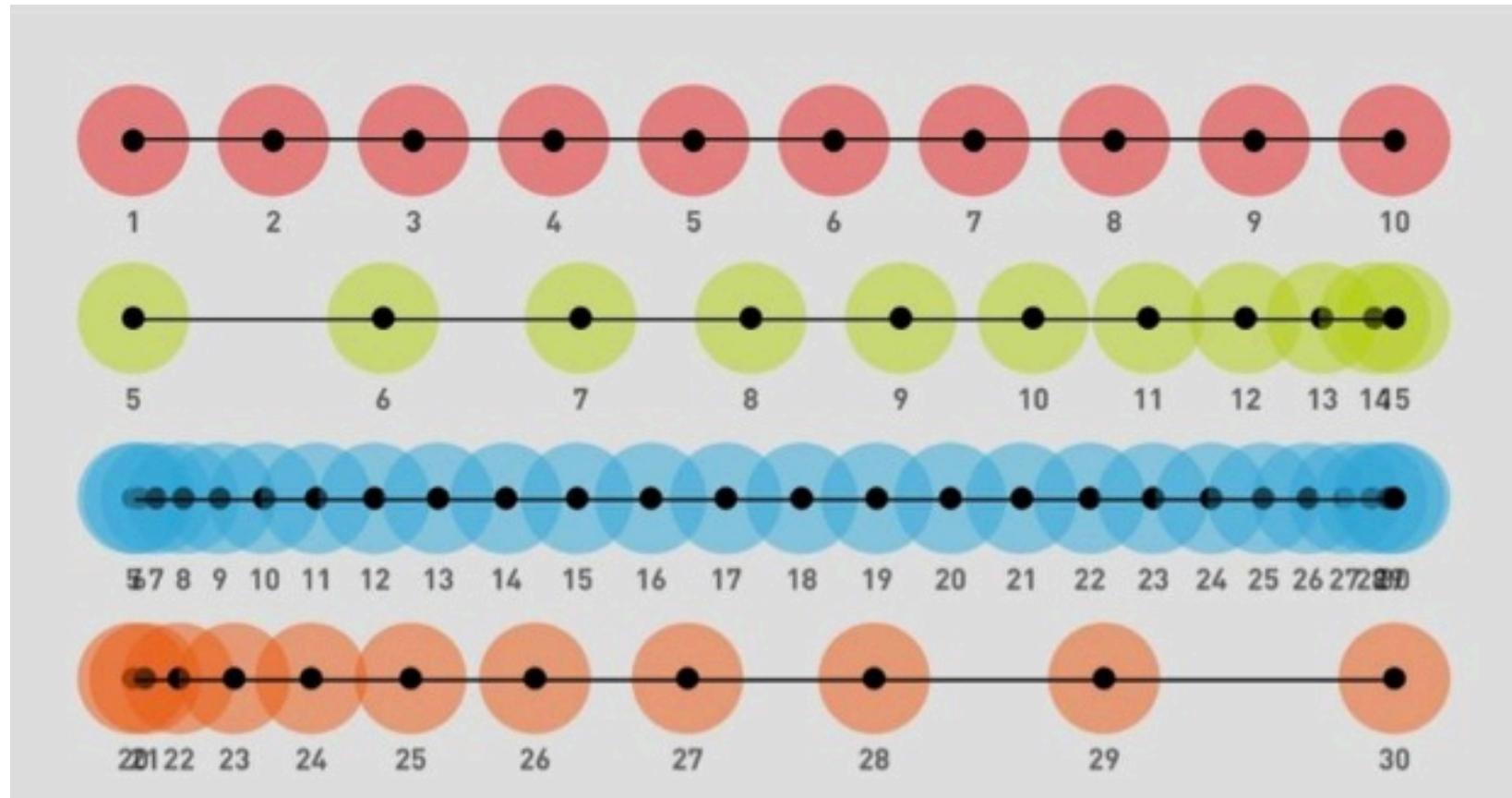
Les transitions animées

Pacing: slow-in slow-out



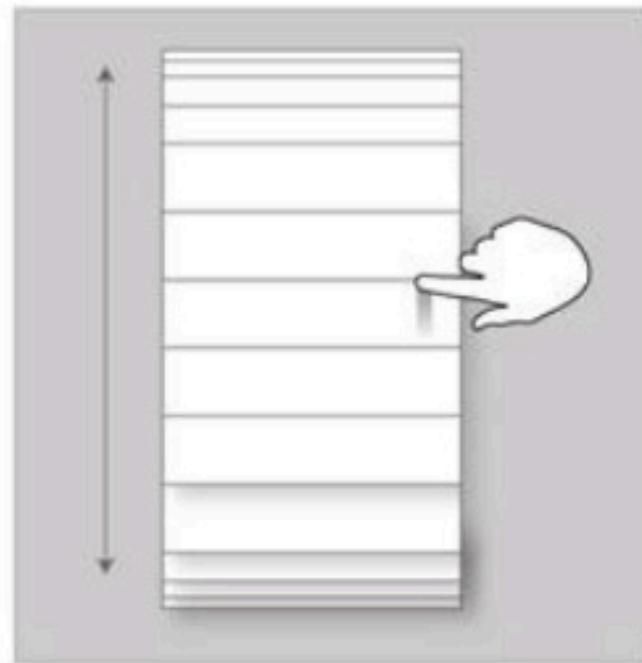
Les transitions animées

Pacing: slow-in slow-out



Les transitions animées

Pacing: slow-in slow-out



Effet d'inertie (slow-out)

Les transitions animées

Pacing: slow-in slow-out

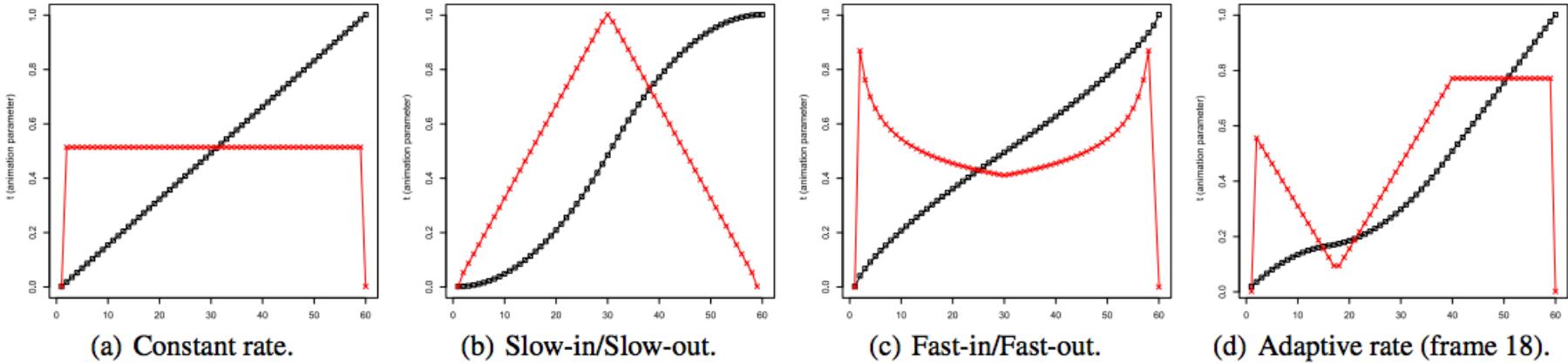


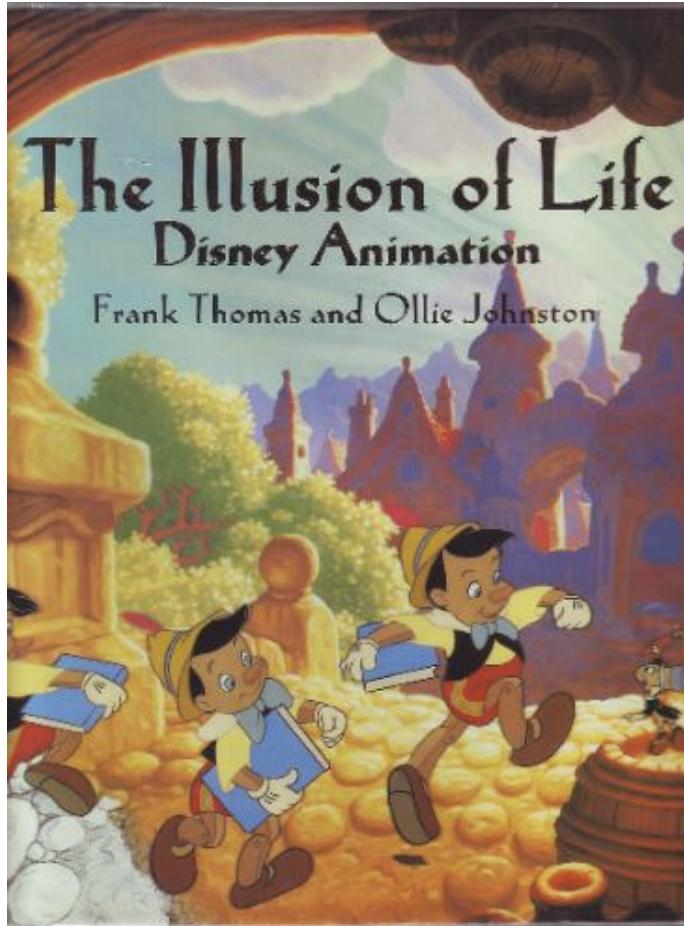
Figure 2. Evolution of the animation parameter t (black squares) and animation rate Δt (red crosses) for 4 different temporal pacing strategies in an animation consisting of $n = 60$ frames. The animation rate is normalized across all 4 techniques to allow for comparison. For adaptive speed, the technique has detected a complexity peak at frame 18. Note that all techniques except SI/SO have abrupt speed changes at the start and end.

Temporal Distortion for Animated Transitions

Pierre Dragicevic¹, Anastasia Bezerianos², Waqas Javed³,
Niklas Elmquist³ and Jean-Daniel Fekete¹

Les transitions animées

Règles de conception



"The illusion of Life" by Disney, 1981
(Lasseter, SIGGRAPH'87)

1. Compression et étirement
2. Anticipation
3. Mise en relief
4. Toute l'action d'un coup / partie par partie
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7. Trajectoire arquée
8. Action secondaire
9. Cohérence physique
10. Exagération
11. Qualité du dessin
12. Charisme

Les transitions animées

Motion blur

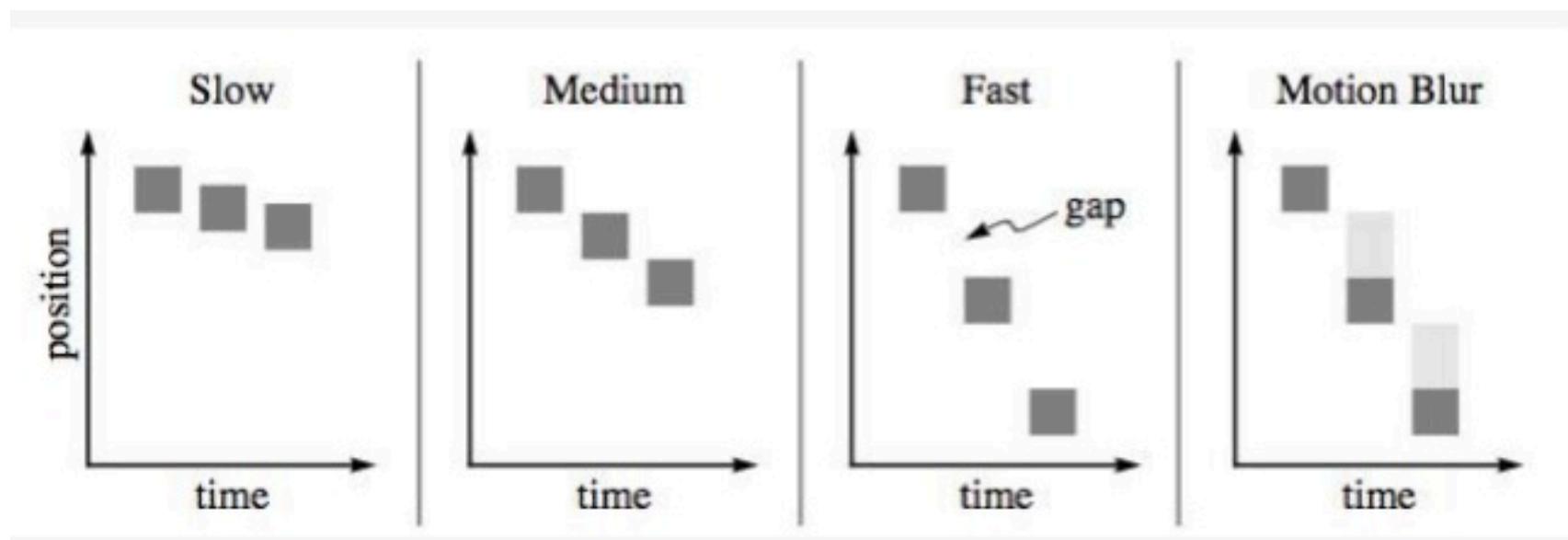
Dans le monde réel, les objets laissent l'impression de laisser une trace derrière eux, dans notre système visuel



Les transitions animées

Motion blur

Une règle d'or: si un objet bouge plus de la moitié de sa taille entre deux frames, alors il faut utiliser du motion blur







Les transitions animées

Questions de recherche

Sont-elles utiles ?

- Expériences contrôlées

Comment les réaliser ?

- Implicite vs. explicite

Comment les concevoir ?

- Règles de conception

Comment mieux les exploiter ?

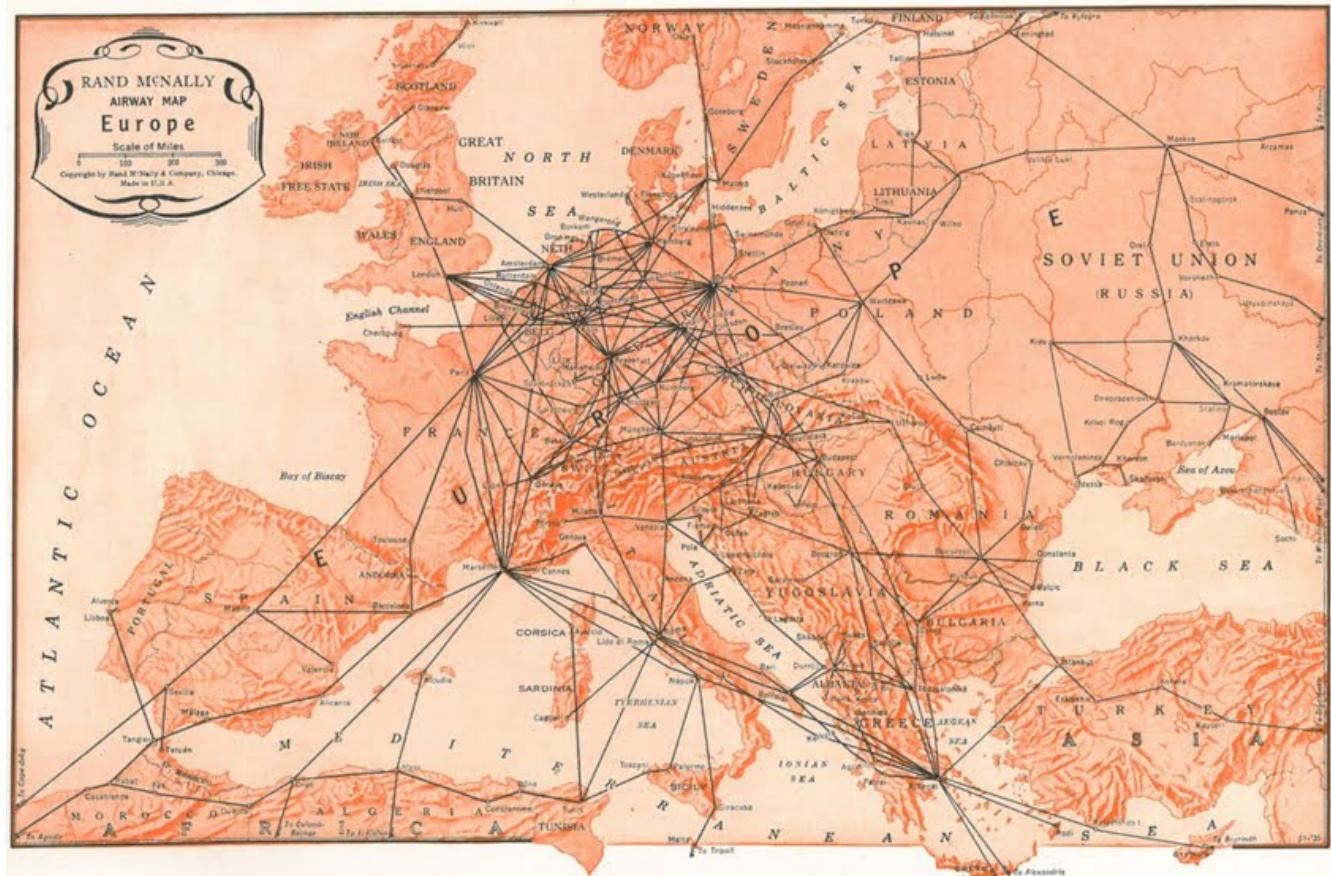
- Nouveaux usages et applications

Comment exploiter les animations ?

#1 ANALYSE DE GRAPHES

Analyse de Graphes

Lecture et navigation



Quels sont les aéroports européens desservis par ORY ?

Analyse de Graphes

Lecture et navigation



Quels sont les aéroports européens desservis par ORY ?

Analyse de Graphes

Lecture et navigation



À quoi ressemble mon réseau social ?

Analyse de Graphes

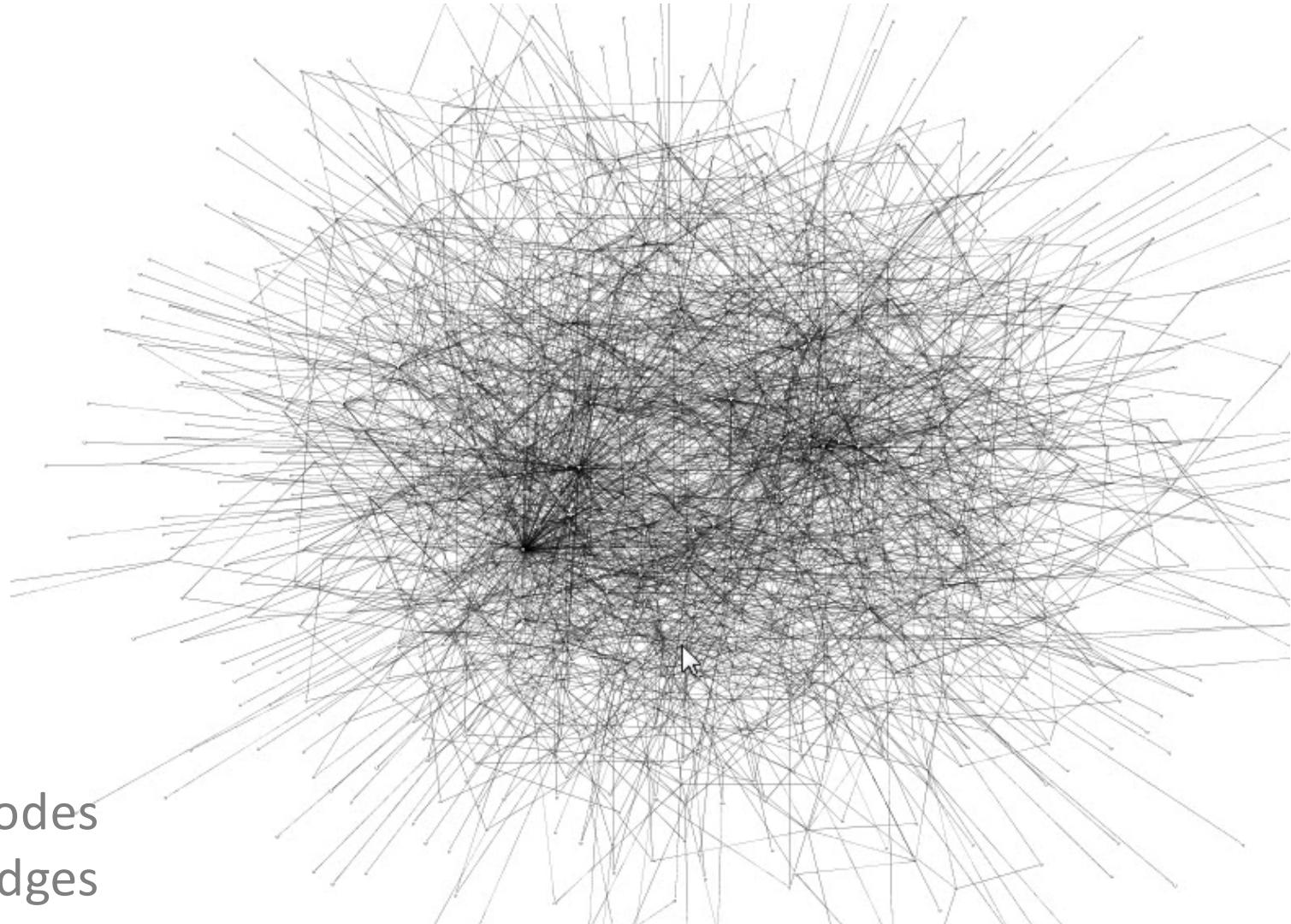
Lecture et navigation



Réseau Facebook
Distance 2

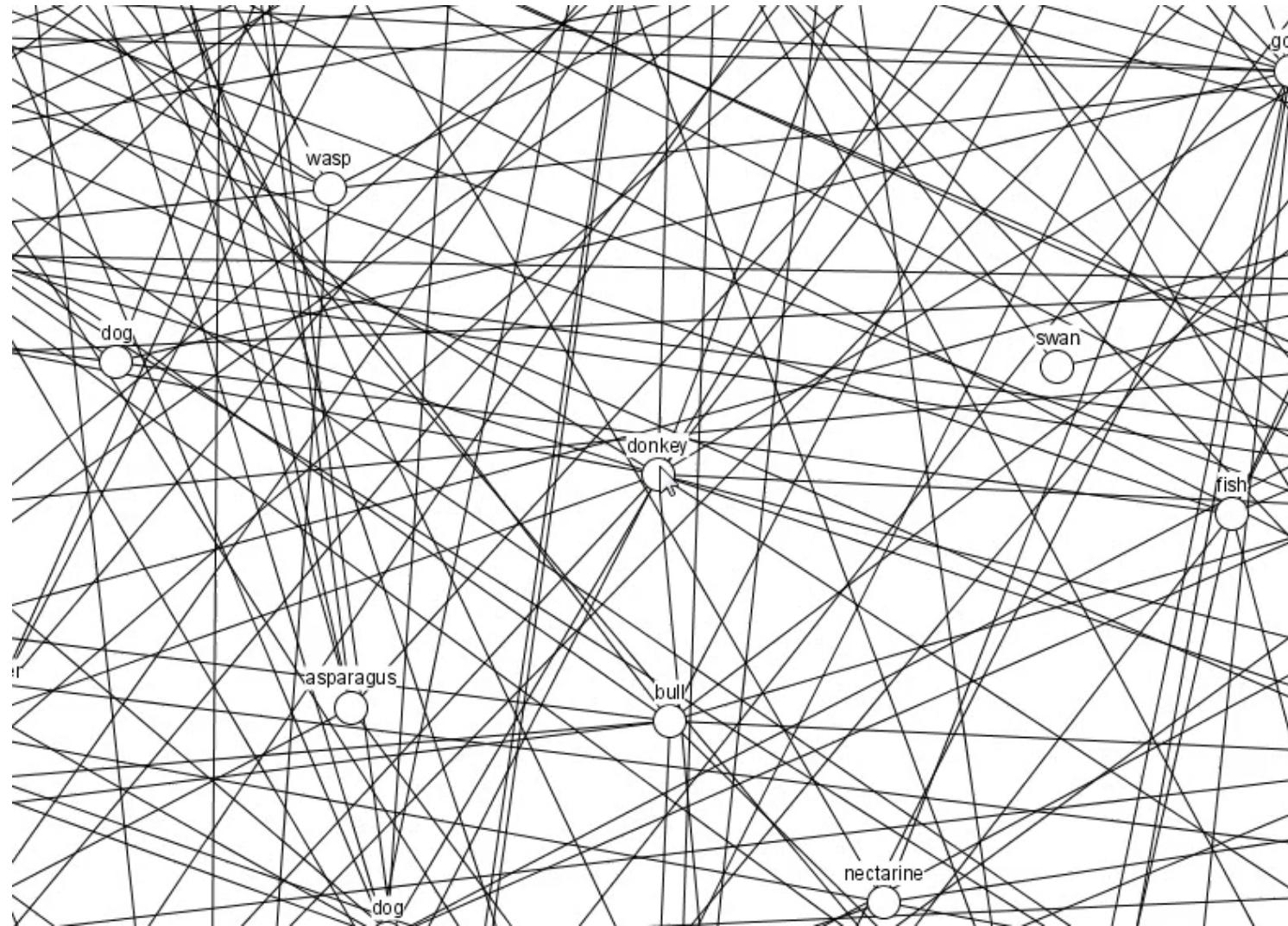
Analyse de Graphes

Navigation: Pan & Zoom



Analyse de Graphes

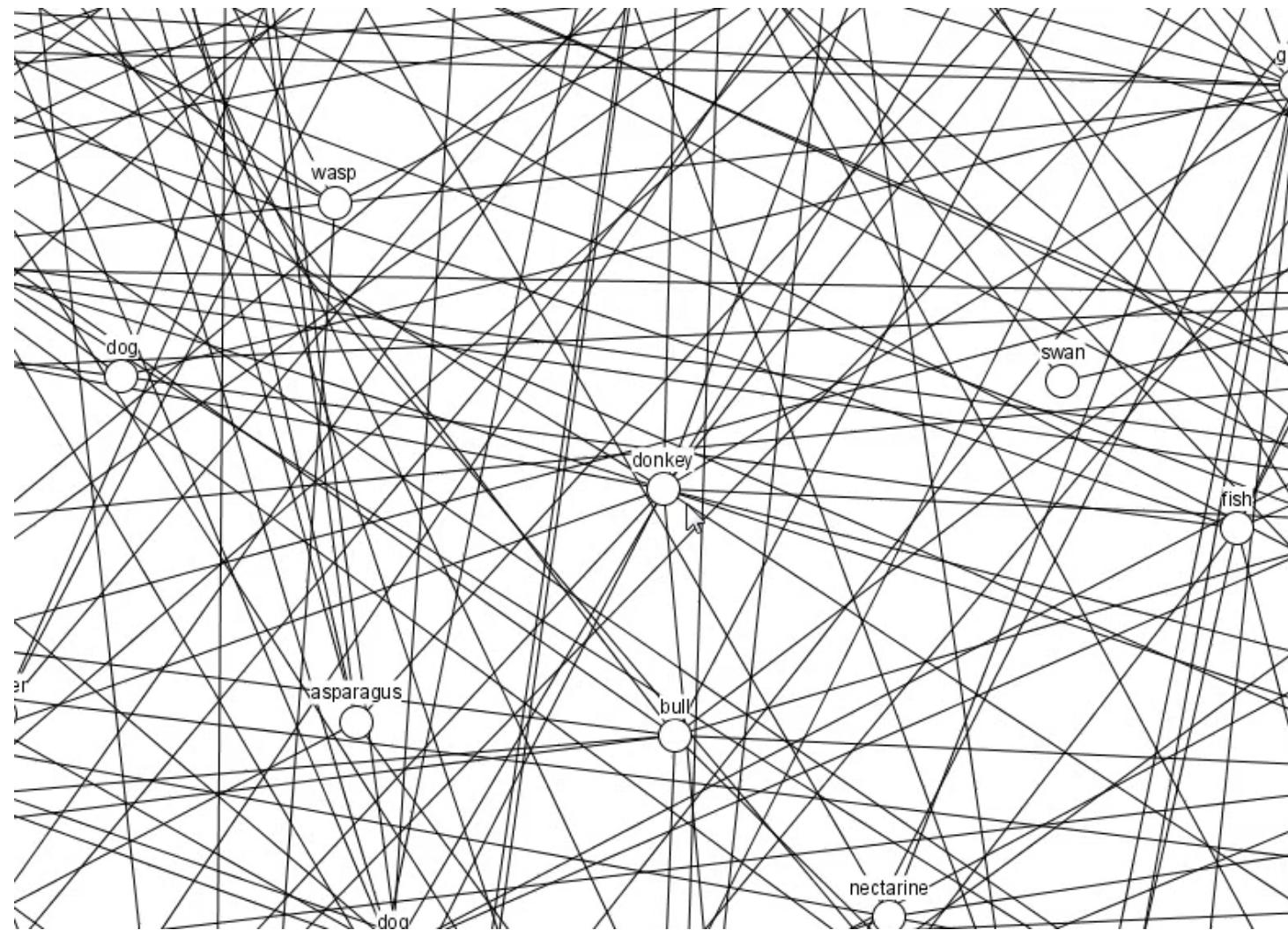
Navigation: Pan & Zoom amélioré



Analyse de Graphes

Navigation: Bring'n Go

[Moscovich et al., CHI' 09]



Analyse de Graphes

Exploiter l'intelligence des données



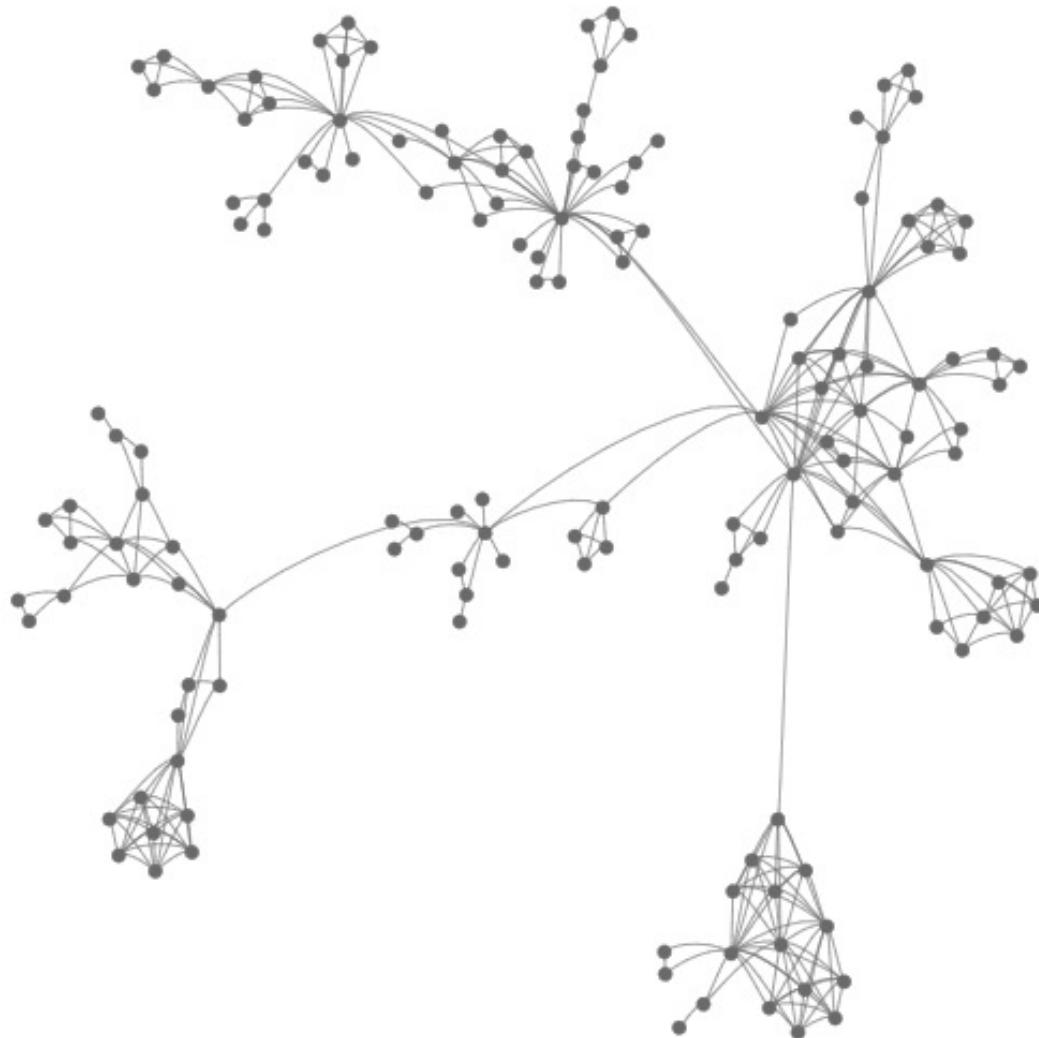
Analyse de Graphes

Analyse de Réseau Sociaux



Analyse de Graphes

Analyse de Réseau Sociaux



Attributs intrinsèques

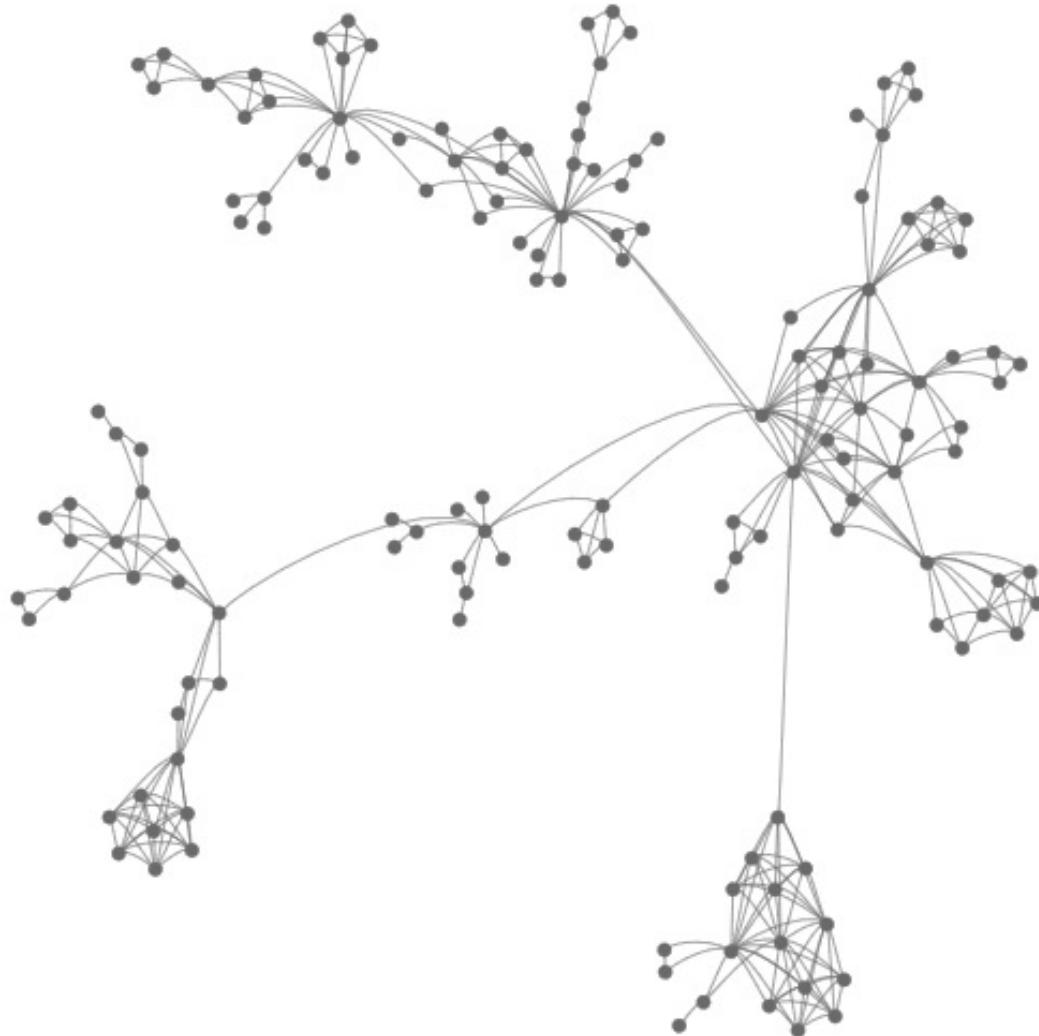
- # publications
- # citations
- année
- position
- ...

Attributs calculés

- degré
- centralité
- Coefficient clustering
- ...

Analyse de Graphes

Analyse de Réseau Sociaux



Attributs intrinsèques

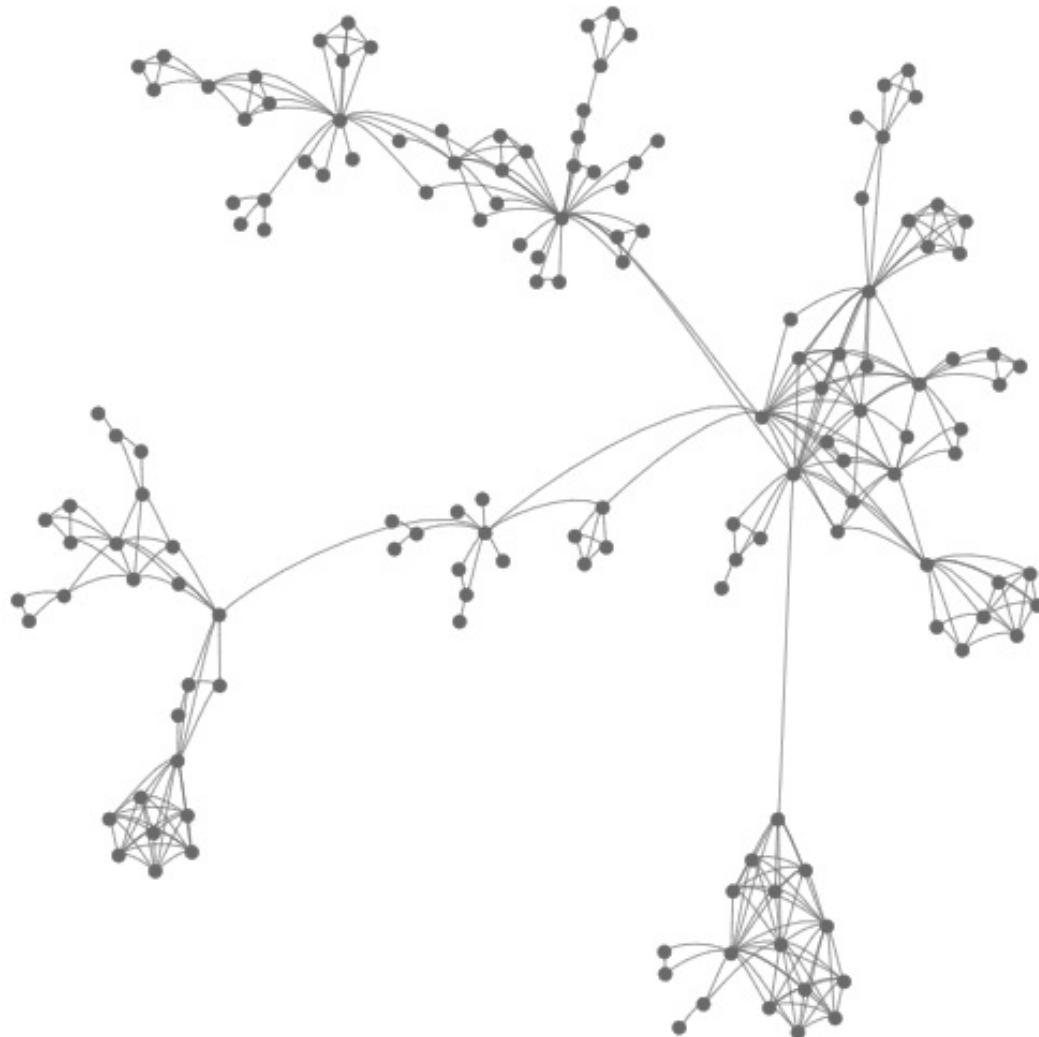
- # publications
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Attributs calculés

- degré
- centralité
- Coefficient clustering
- ...

Analyse de Graphes

Analyse de Réseau Sociaux



Attributs intrinsèques

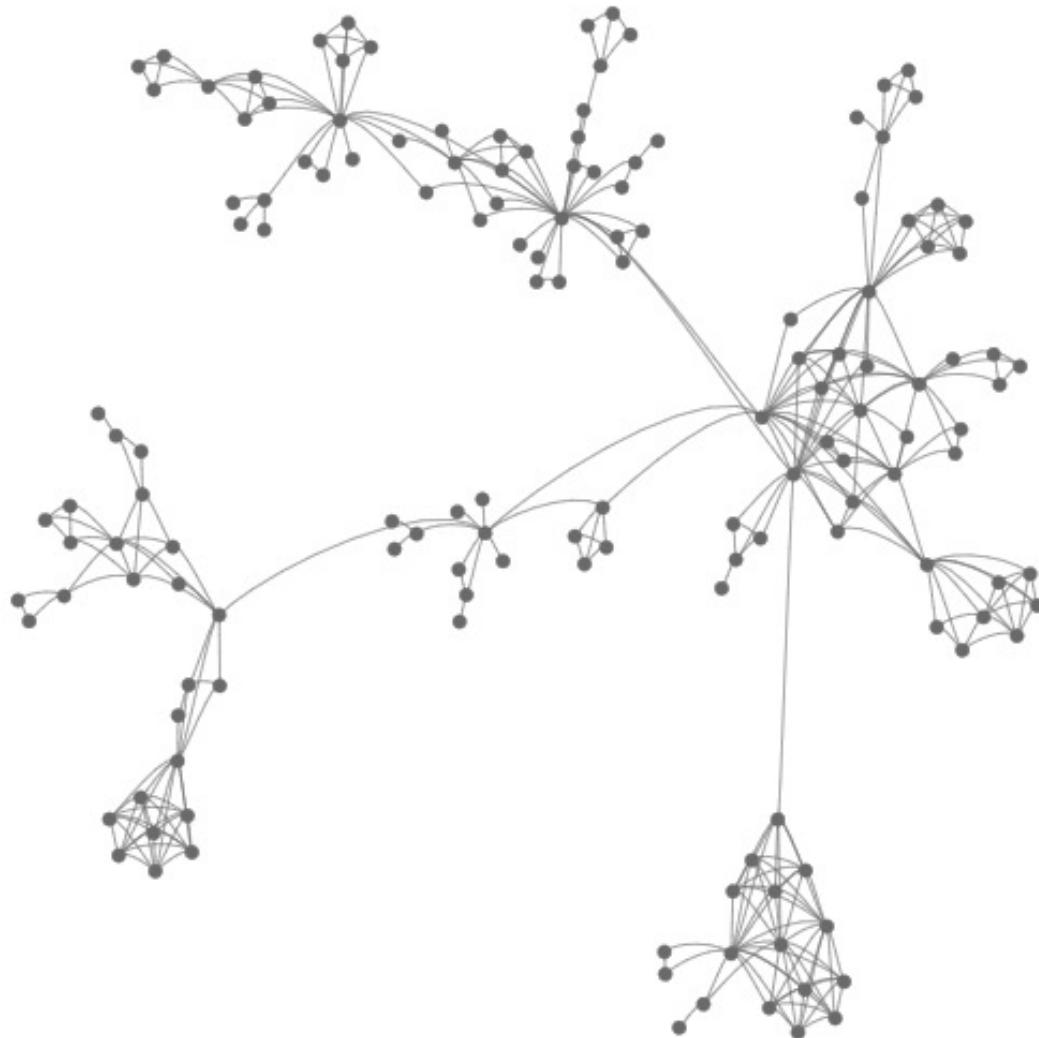
- # publications
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Attributs calculés

- degré
- centralité
- Coefficient clustering
- ...

Analyse de Graphes

Analyse de Réseau Sociaux



Attributs intrinsèques

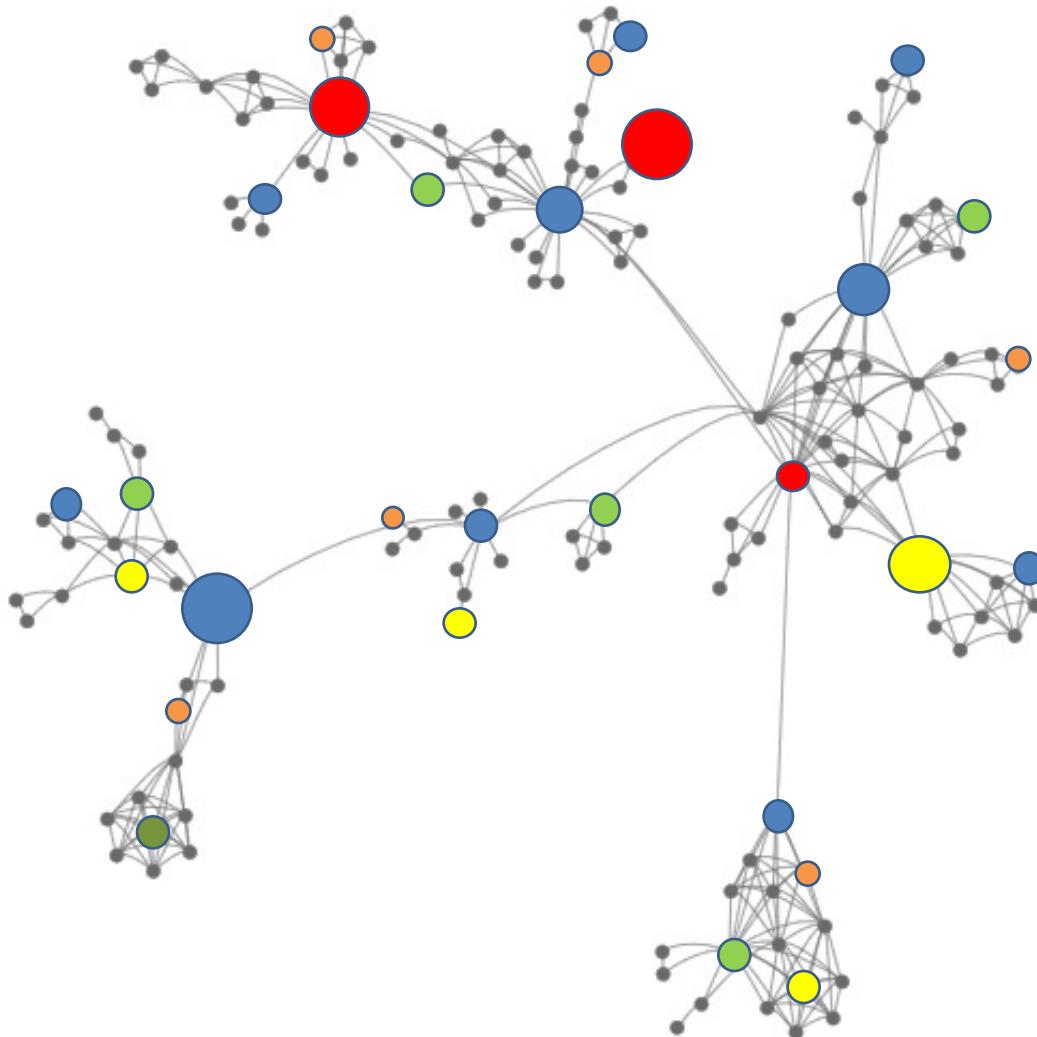
- # publications
- # citations
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Attributs calculés

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Analyse de Graphes

Analyse de Réseau Sociaux



Attributs intrinsèques

- # publications
- # citations
- année
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- ...

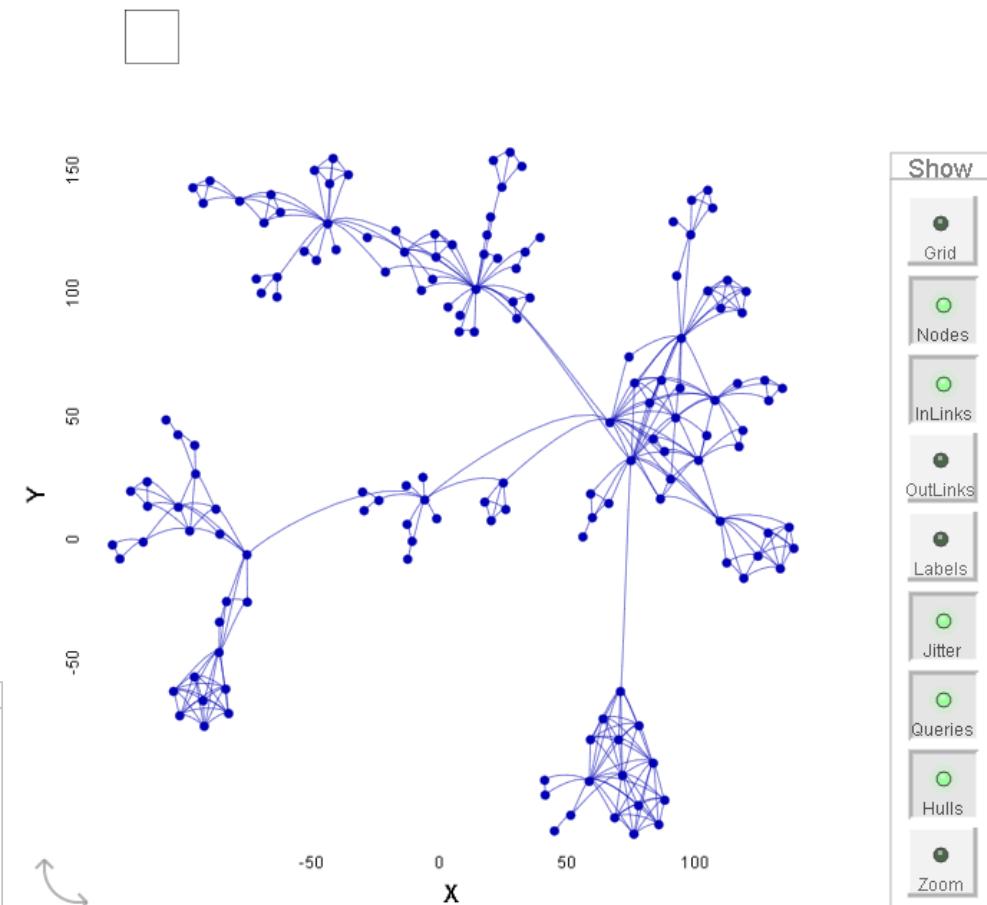
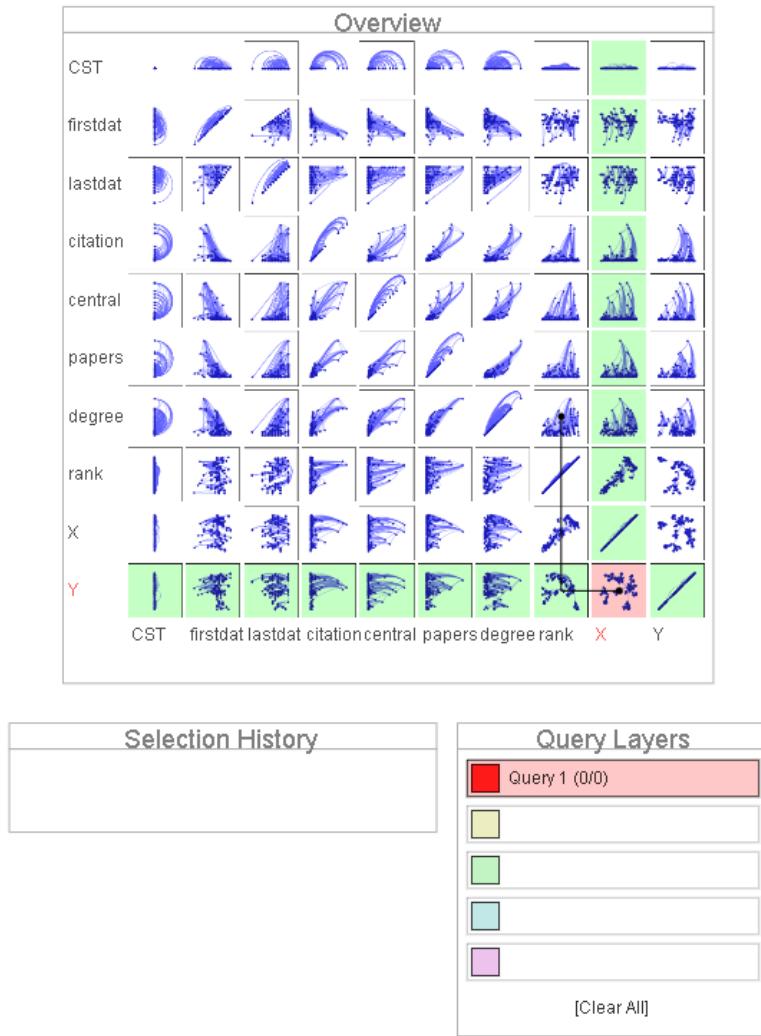
Attributs calculés

- degré
- centralité
- Coefficient clustering
- ...

Analyse de Graphes

GraphDice

[Bezerianos et al., Eurographics 2010]



Analyse de Graphes

GraphDice

[Bezerianos et al., Eurographics 2010]

Overview

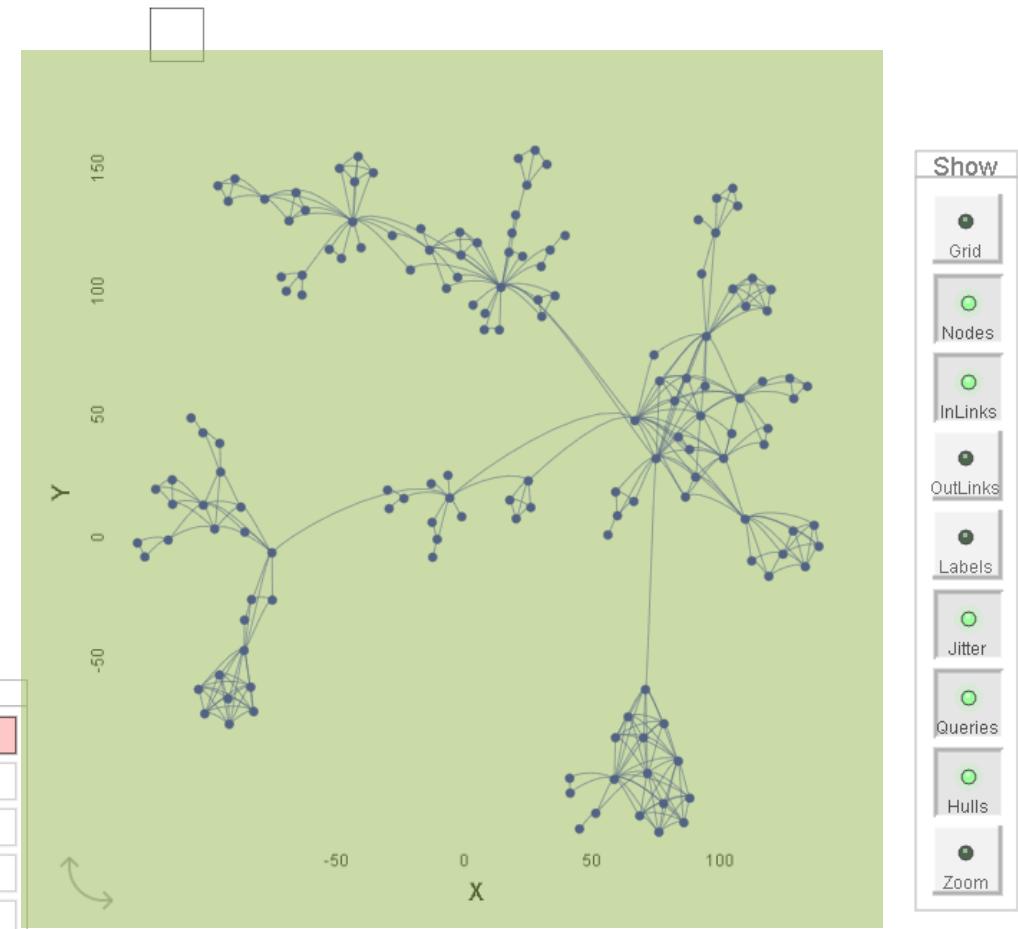
| | CST | firstdat | lastdat | citation | central | papers | degree | rank | X | Y |
|----------|-----|----------|---------|----------|---------|--------|--------|------|-----|-----|
| CST | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| firstdat | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| lastdat | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| citation | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| central | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| papers | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| degree | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| rank | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| X | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Y | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

Selection History

Query Layers

- Query 1 (0/0)
-
-
-
-

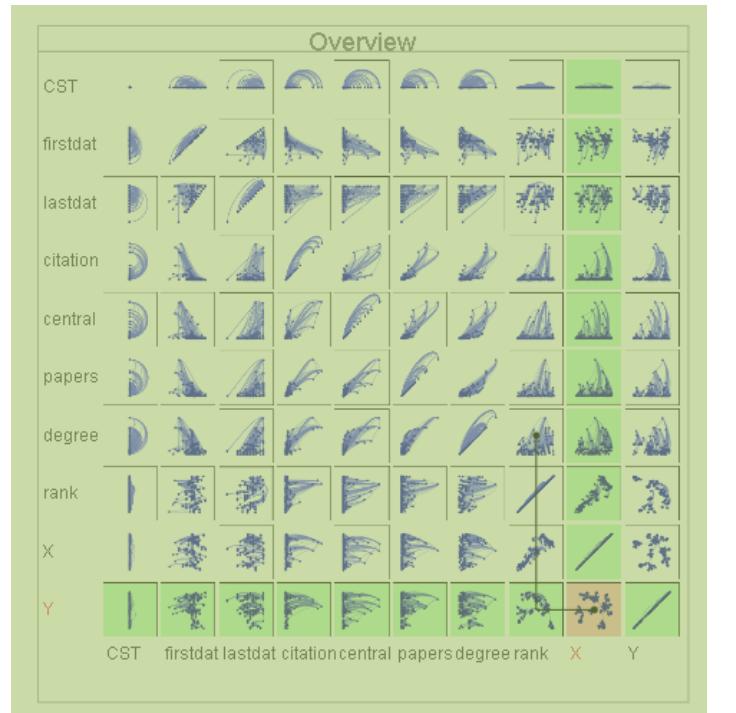
[Clear All]



Analyse de Graphes

GraphDice

[Bezerianos et al., Eurographics 2010]



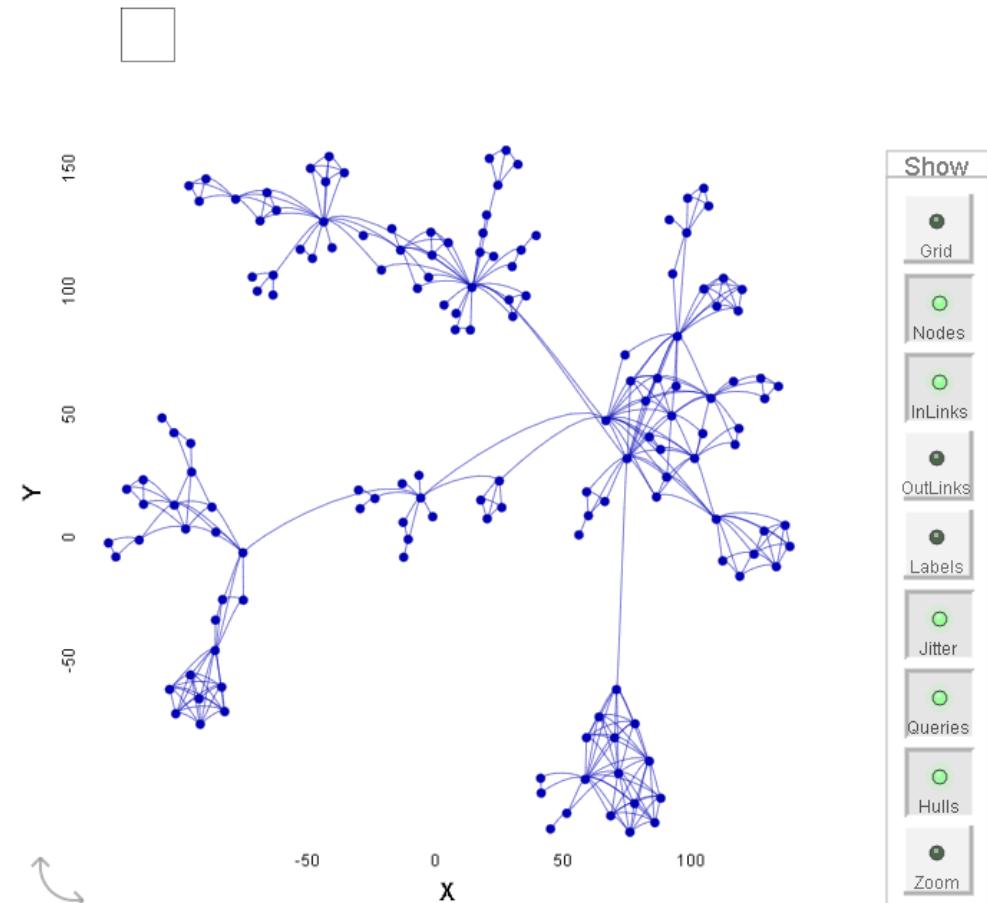
Selection History

-
-
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Query Layers

- Query 1 (0/0)
-
-
-
-

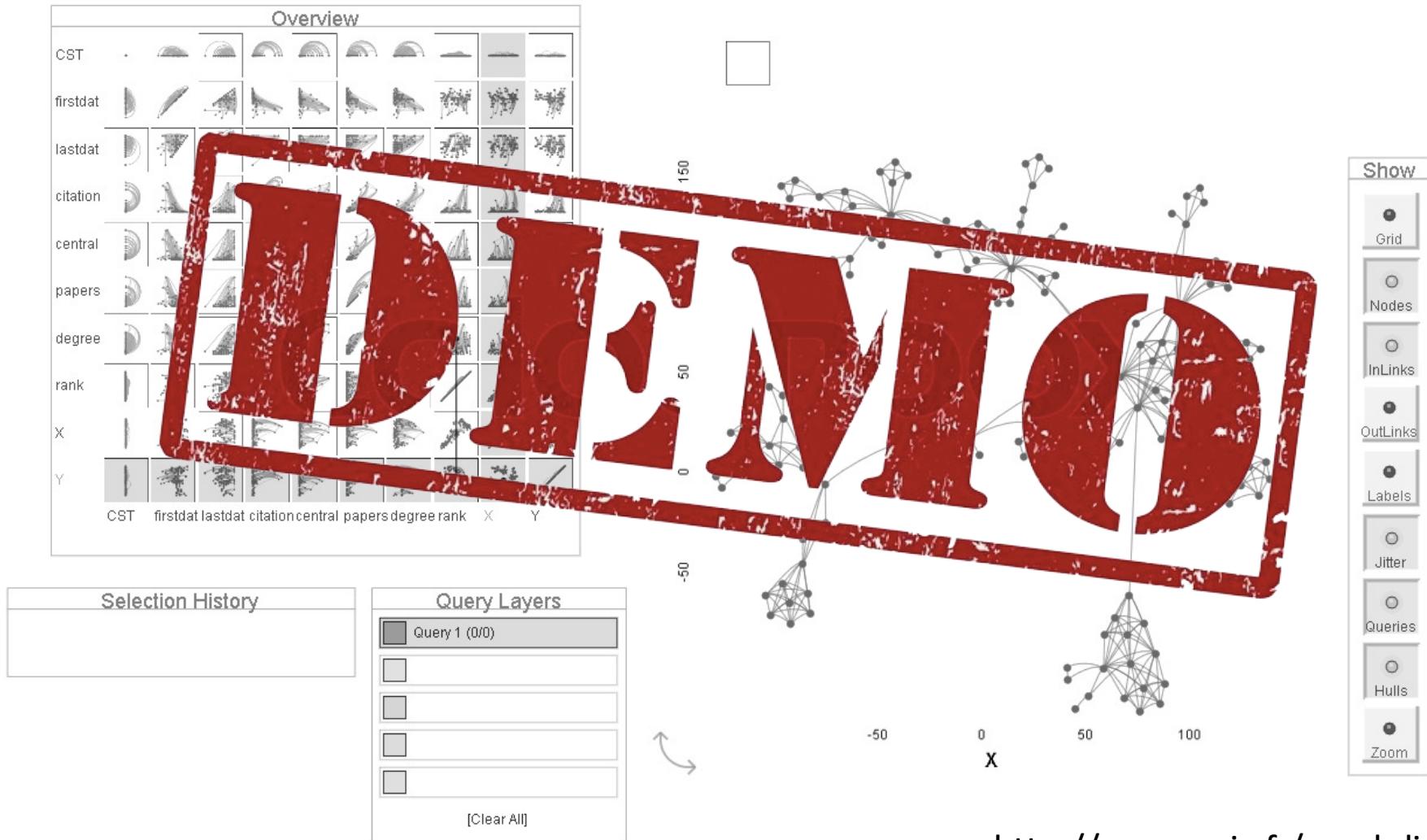
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Analyse de Graphes

GraphDice

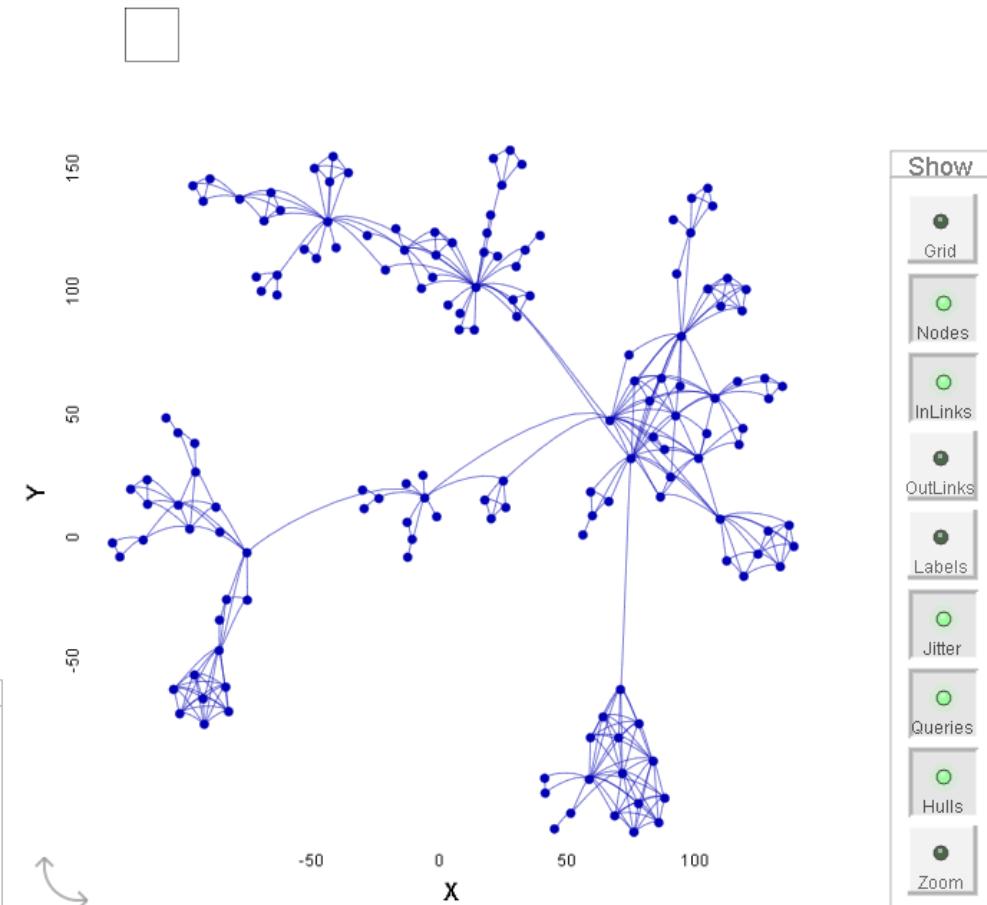
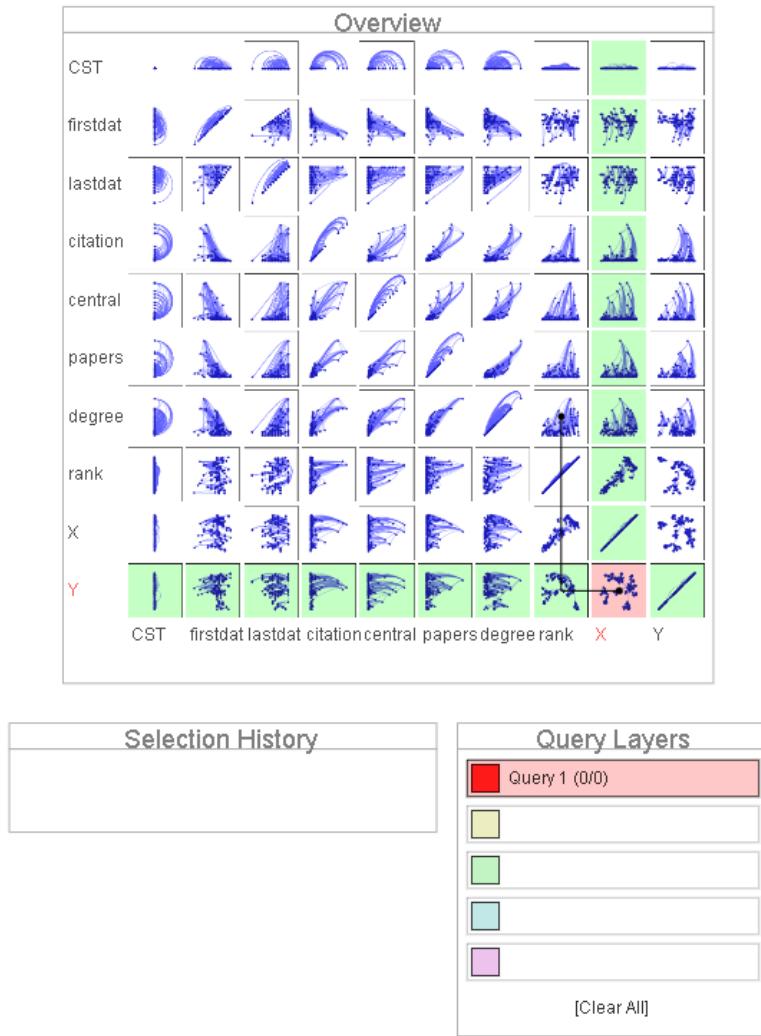
[Bezerianos et al., Eurographics 2010]



Analyse de Graphes

GraphDice

[Bezerianos et al., Eurographics 2010]

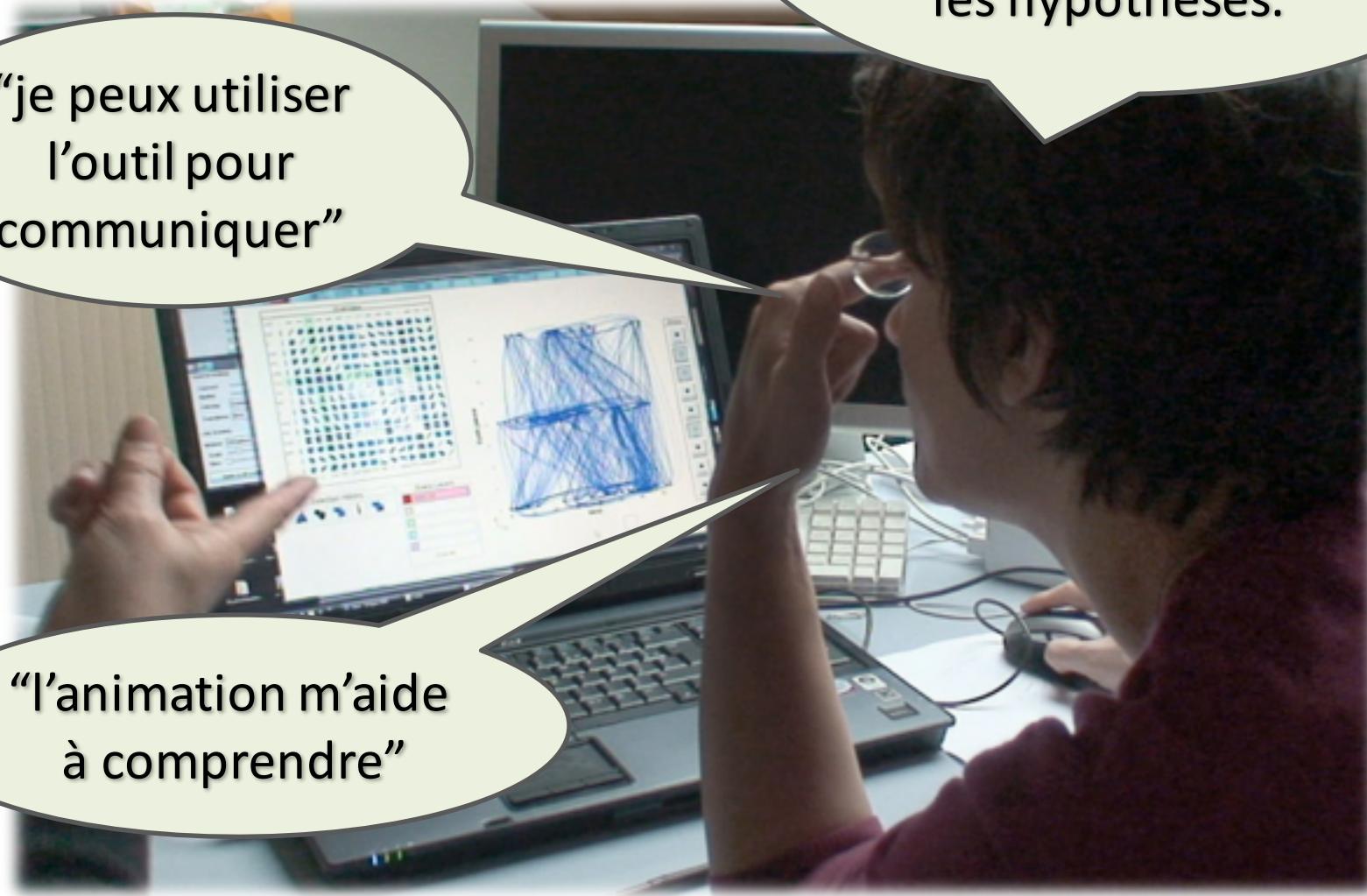


Analyse de Graphes

GraphDice

“toutes les combinaisons sont immédiatement accessibles pour explorer les hypothèses.”

“je peux utiliser l'outil pour communiquer”



“l'animation m'aide à comprendre”

Comment exploiter les animations ?

#2 MANIPULATION DE CONTENU

Manipulation de contenu

Historique de révisions

Best Practices: Improving Your Document Workflow

1. Ensure document accessibility and readability by using clear, concise language and avoiding jargon or technical terms.
2. Implement electronic signatures to streamline your process, reducing waiting times through e-signature integration, and ensuring that documents are valid and compliant.
3. Store documents in a centralized place that is easily accessible and allows for quick searching and retrieval.
4. Utilize document automation tools to reduce manual intervention, such as document assembly, which can significantly reduce time spent on repetitive tasks.
5. Ensure document security by using strong encryption and secure storage methods to protect sensitive information.
6. Ensure document compliance with legal requirements, such as GDPR, by staying up-to-date with regulations and ensuring that documents are accurate and compliant.

CHANGING THIS

Companies today are constantly looking for ways to improve their document workflow. One of the most common challenges is managing multiple versions of the same document, which can lead to confusion and errors. Another challenge is finding a way to quickly access and retrieve specific documents, especially if they are stored in different locations. Additionally, many companies still rely on paper-based processes, which can be time-consuming and prone to errors. By implementing best practices for document management, companies can improve their document workflow and achieve greater efficiency and accuracy.

Manipulation de contenu

Historique de révisions

Manuscript page showing heavily redacted text. The text appears to be a historical narrative or document, likely a diary entry, written in cursive script. Large portions of the text have been completely obscured by a thick red marker.

Screenshot of a digital version of the manuscript. A large portion of the text has been highlighted in red, indicating the area that was redacted in the original document. The redacted text is visible as a lighter shade of red within the highlighted area.

Screenshot of a digital version of the manuscript. The redacted text from the previous image has been restored, appearing as blacked-out text within the red-highlighted area. The restored text is clearly legible and matches the original content.

May 1492

The boy was sitting beneath a branch of the ever that marked the end of his people's place. These lesser waters struggled through the clan's fields; their way broken here and there by the mounds of fallen trees, until their stream was lost in the green island.

He was Aruan, son of Pujocan, and stood taller than most boys of his age. His mother, Qapana, had carried the first four or five years following his birth but then stopped, for the next age that manhood would come when he was ready for manhood. Now he had reached this stage. His limbs were well formed, his shoulders sturdy and straight. His jet-black hair was shaved back in a half-moon above his temples. From ear to ear, and his eyebrows were plucked. His lower lip was bored through in the custom of his people, and in it he wore a plug of white bone as large as his thumb.

Aruan dangled his feet in the cool water. No one ever came here, because it was too shallow for bathing and the fish were few and meagre, but such a place saved his thoughts this afternoon.

Could he successively, over Great Rainy pax, when he would be awake in the longhouse, listening to the sacred music from the clearing, chthonic that held back the sounds of the jungle, as the villagers sang the praises of his father, Pujocan, the Warriour, Pujocan, the Hunter! But Pujocan had stopped going to the celebrations and would have done, often without reason. And when Pujocan had become an outcast, so had his son, who was taunted and mocked by his compatriots.

When they played the games of animals, Aruan had to be the small centaur, Kukutin, who lived at the edge of the forest, and was forced to dash about, squeaking shrilly, until the others passed upon him. On a certain hand summer had given Aruan's bowstring, so that it snapped at his shot, at the river, they would be in wat not arduous him whom he went to swim? "Run, Aruan, run to your island! Hurry to the fishes of the

Manipulation de contenu

Historique de révisions



C'est ici

Manipulation de contenu

Historique de révisions

Hervey de Saint Denys has recently started to be known for his introspective studies on dreams. He wrote down his dreams on a daily basis from the age of 13. In 1867, he anonymously published *Les rêves et les moyens de les diriger* (Dreams and the Ways to Direct Them). In this book, he proposed techniques to control dreams, and he described dreams in which the "dreamer is perfectly aware he is dreaming". This particular state of consciousness later came to be called lucid dreaming.

Manipulation de contenu

Historique de révisions

Hervey de Saint Denys has recently started to be known for his introspective studies on dreams. He wrote down his dreams on a daily basis from the age of 13. In 1867, he anonymously published *Les rêves et les moyens de les diriger; observations pratiques* (Dreams and the Ways to Direct Them:Practical Observations). In this book, he proposed techniques to control dreams, and he described dreams in which the "dreamer is perfectly aware he is dreaming". This particular state of consciousness later came to be called lucid dreaming.

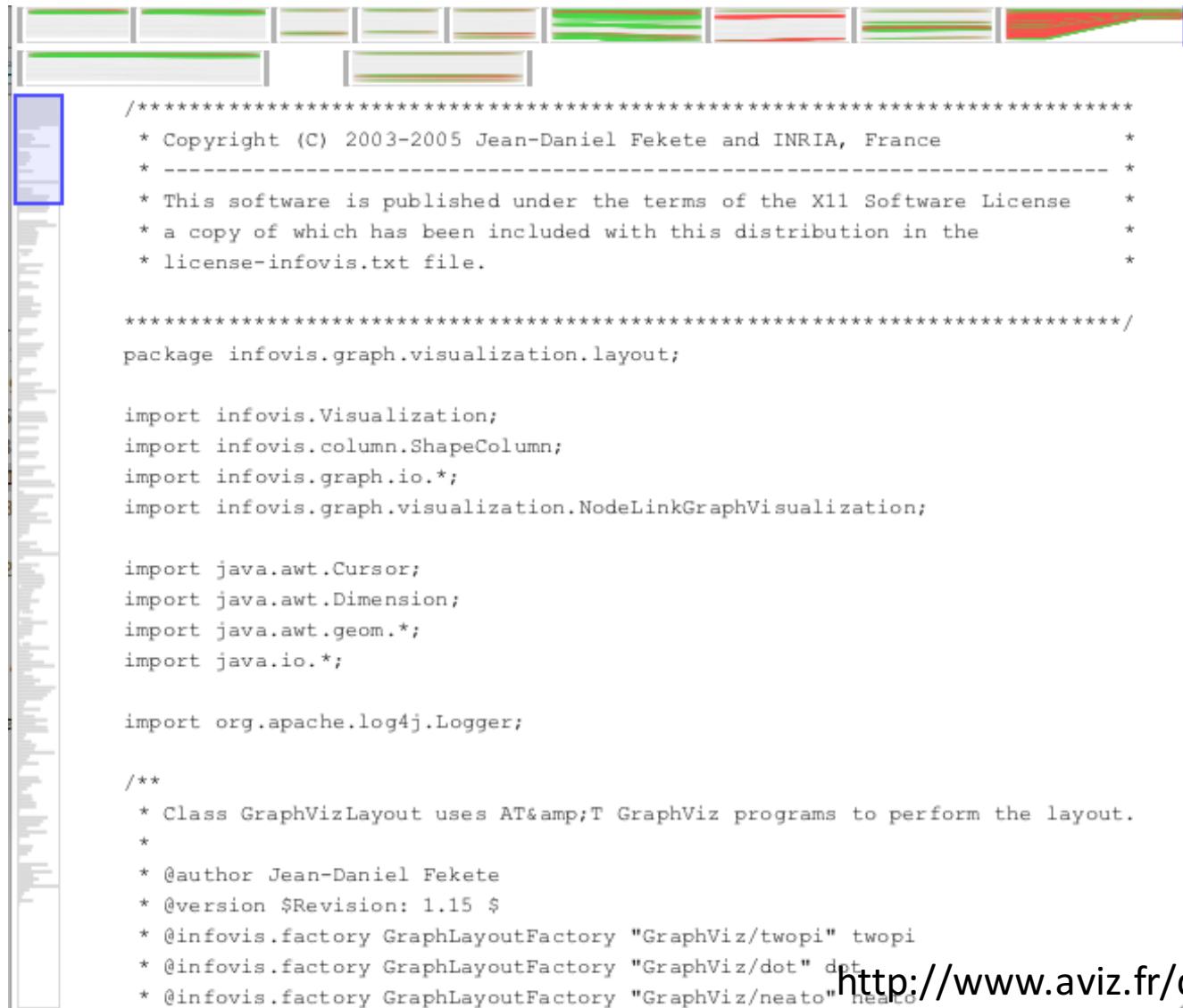
Manipulation de contenu

Historique de révisions

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Manipulation de contenu

Diffamation



```
/*
 * Copyright (C) 2003-2005 Jean-Daniel Fekete and INRIA, France
 *
 * This software is published under the terms of the X11 Software License
 * a copy of which has been included with this distribution in the
 * license-infovis.txt file.
 */
package infovis.graph.visualization.layout;

import infovis.Visualization;
import infovis.column.ShapeColumn;
import infovis.graph.io.*;
import infovis.graph.visualization.NodeLinkGraphVisualization;

import java.awt.Cursor;
import java.awt.Dimension;
import java.awt.geom.*;
import java.io.*;

import org.apache.log4j.Logger;

/**
 * Class GraphVizLayout uses AT&T GraphViz programs to perform the layout.
 *
 * @author Jean-Daniel Fekete
 * @version $Revision: 1.15 $
 * @infovis.factory GraphLayoutFactory "GraphViz/twopi" twopi
 * @infovis.factory GraphLayoutFactory "GraphViz/dot" dot
 * @infovis.factory GraphLayoutFactory "GraphViz/neato" neato
 */
```

Manipulation de contenu

Guerre d'édition



The Pope is the Bishop of Rome, the spiritual leader of the Roman Catholic Church and the absolute monarch of Vatican City. He is believed by Catholics to fulfill this role as the Successor of Saint Peter, also making him Vicar of Christ and the Vicar of the Prince of the Apostles. The office of the Pope is called the Papacy; his ecclesiastical jurisdiction is called the Holy See (Sancta Sedes in Latin) or Apostolic See (this latter, on the basis that both St. Peter and St. Paul were martyred at Rome). Early bishops occupying the See of Rome were designated Vicar of Peter; for later Popes the more authoritative Vicar of Christ was substituted; this designation was first used by the Roman Synod of 495 to refer to Pope Gelasius I, an advocate of papal supremacy among the patriarchs. Marcellinus (d. 304) is the first Bishop of Rome whom sources show used the title of Pope. In the 11th century, after the East-West Schism, Gregory VII declared the term "Pope" to be reserved for the Bishop of Rome. The current (265th) Pope is Pope Benedict XVI of Bavaria, elected April 19, 2005 in papal conclave.

More about the Pope...

Manipulation de contenu

Diffamation



Manipulation de contenu

Manipulation d'images



Manipulation de contenu

Changer la couleur des yeux



Manipulation de contenu

Changer la couleur des yeux



IDE MO

Comment exploiter les animations ?

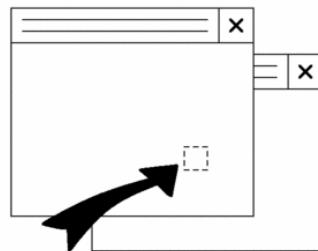
#3 RATTRAPER “UN ÉPISODE RATÉ”

Rattraper “un épisode raté”

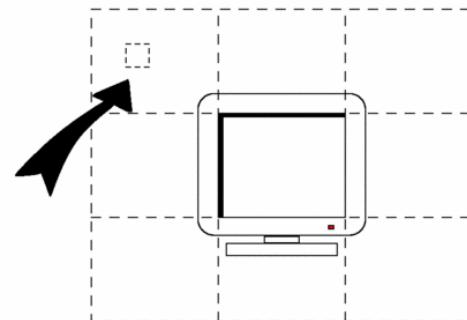
Visibilité des pixels

[Chevalier et al., UIST 2012]

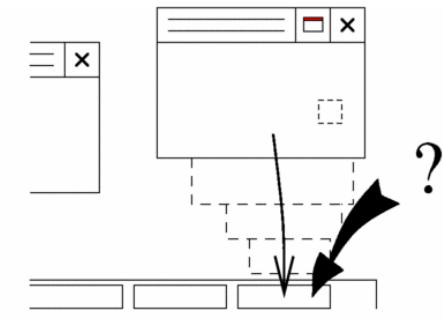
PAS MONTRÉ



a

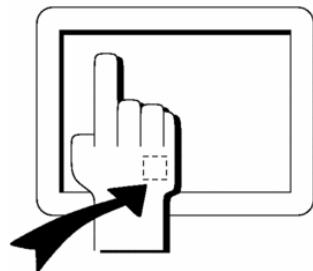


b

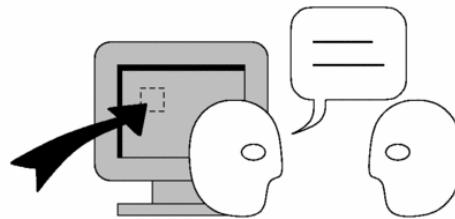


c

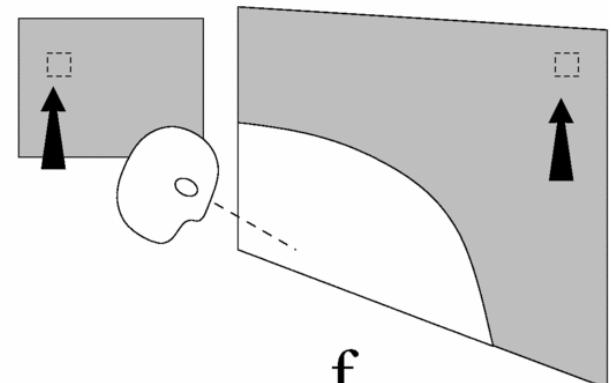
PAS VU



d



e

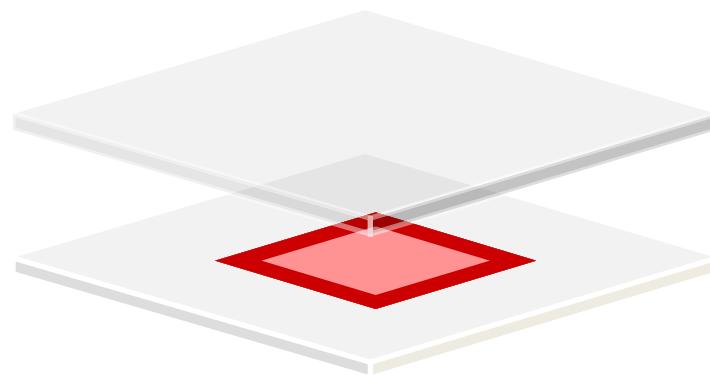


f

Rattraper “un épisode raté”

Mnemonic rendering

[Bezerianos et al., CHI2010]

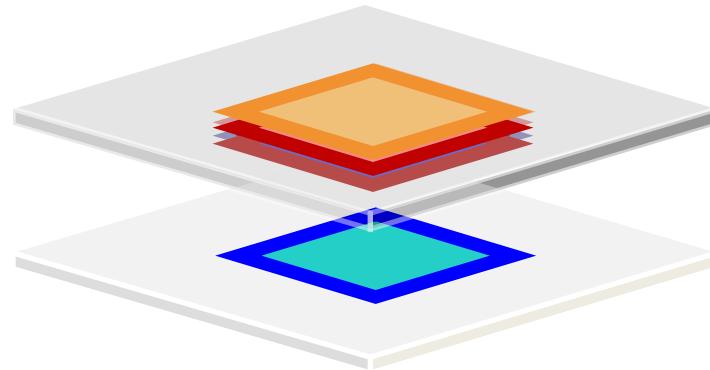


Buffering

Rattraper “un épisode raté”

Mnemonic rendering

[Bezerianos et al., CHI2010]



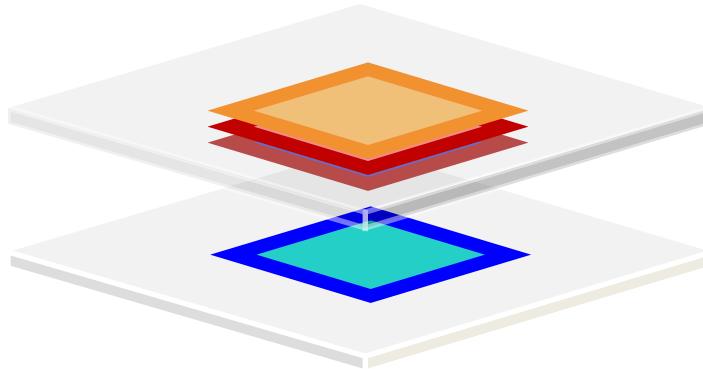
Flashback

Persistence

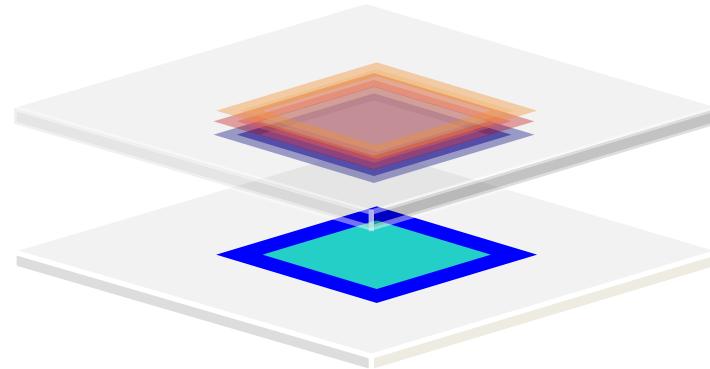
Rattraper “un épisode raté”

Mnemonic rendering

[Bezerianos et al., CHI2010]



Flashback

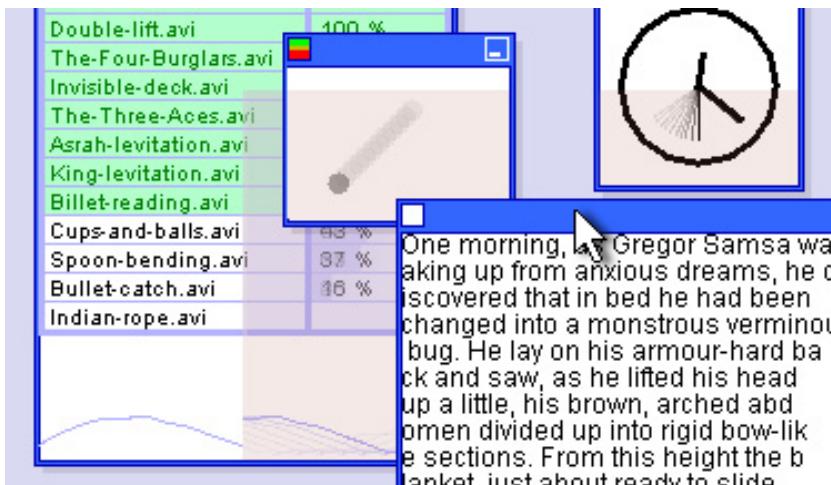


Persistence

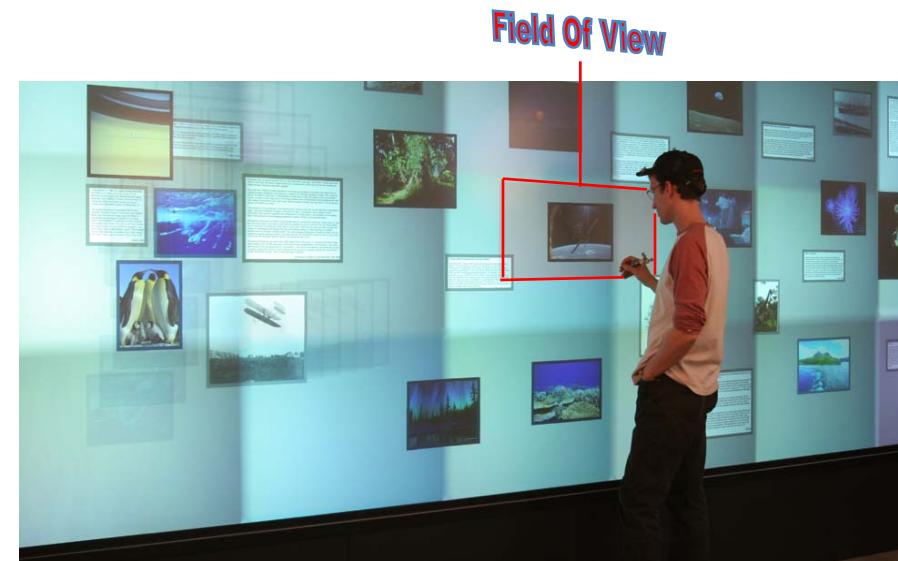
Rattraper “un épisode raté”

Mnemonic rendering

[Bezerianos et al., UIST2006]



MNEMONIC DESKTOP



MNEMONIC WALL

Rattraper “un épisode raté”

Mnemonic rendering

[Bezerianos et al., UIST2006]

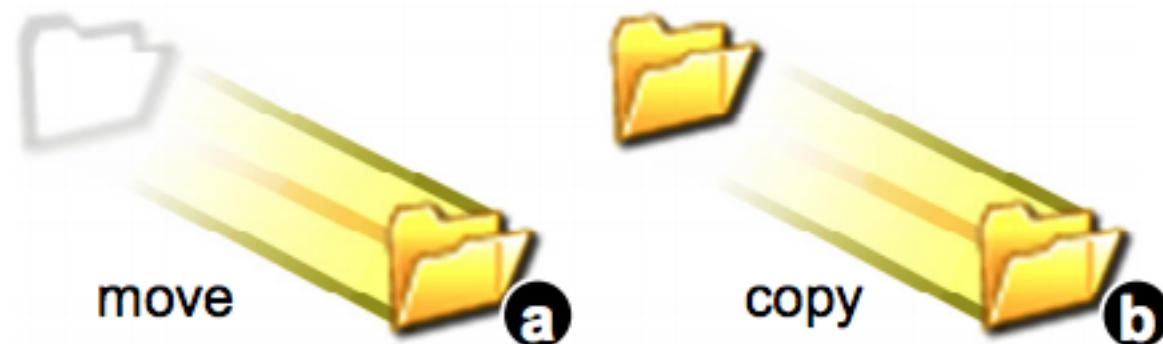
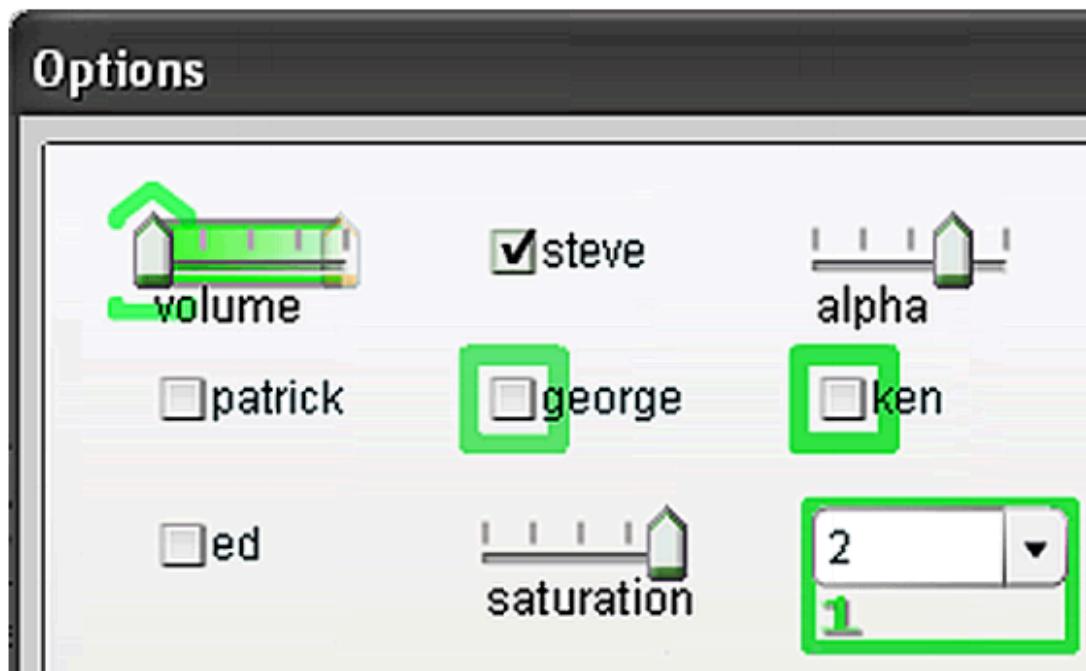
Mnemonic Rendering: An Image-Based Approach for Exposing Hidden Changes in Dynamic Displays

A. Bezerianos, P. Dragicevic, R. Balakrishnan
Dynamic Graphics Project Lab
University of Toronto
www.dgp.toronto.edu

Rattraper “un épisode raté”

Phosphor

[Baudish et al., UIST 2006]



Mieux explorer pour mieux analyser

POUR TERMINER

Pour Terminer

Donner vie aux illustrations



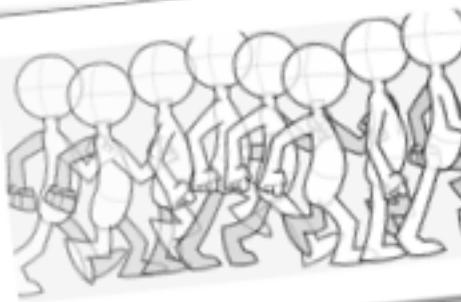
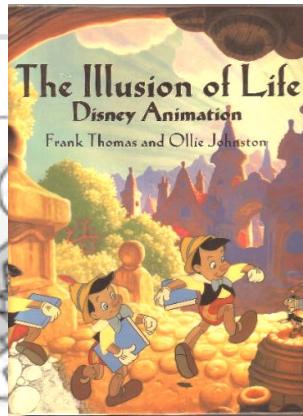
Pour Terminer Donner vie aux illustrations



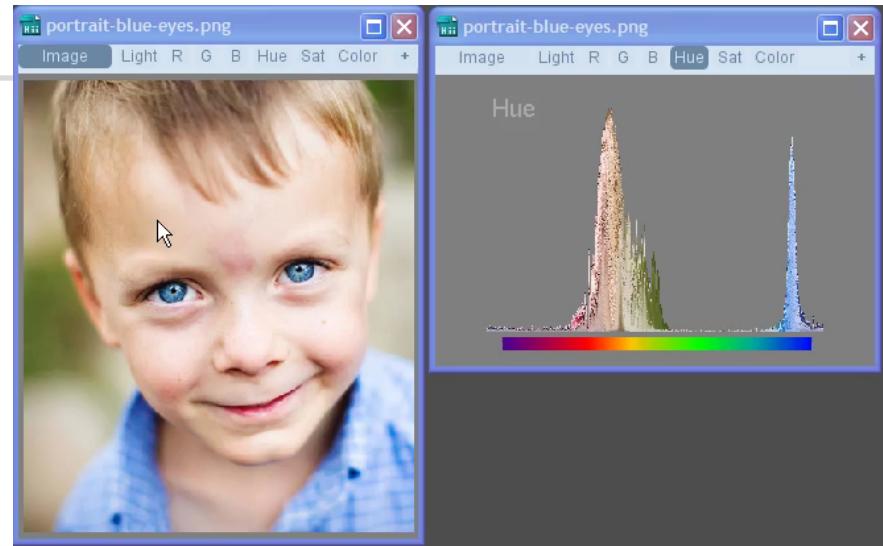
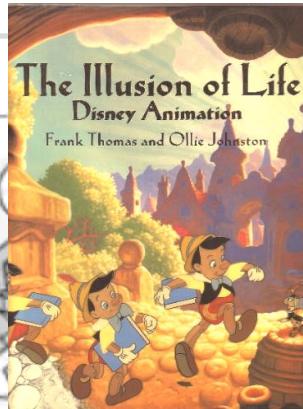
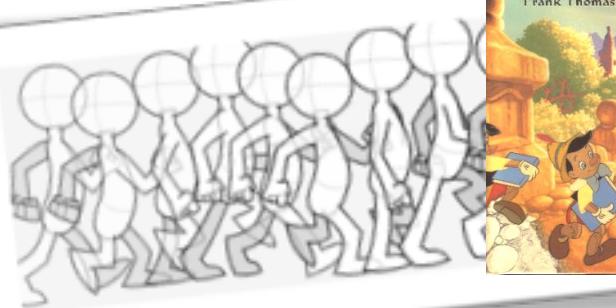
Pour Terminer Draco



Résumé



Résumé



Hervey de Saint Denys has recently started to be known for his introspective studies on dreams. He wrote down his dreams on a daily basis from the age of 13. In 1867, he anonymously published *Les rêves et les moyens de les diriger* (Dreams and the Ways to Direct Them). In this book, he proposed techniques to control dreams, and he described dreams in which the "dreamer is perfectly aware he is dreaming". This particular state of consciousness later came to be called lucid dreaming.



Pour Terminer Conclusions

LES TRANSITIONS ANIMÉES PEUVENT ÊTRE UTILES

- Elles aident à comprendre les changements
- Elles supportent l'exploration rapide
- Elles sont plaisantes à l'oeil

QUAND / COMMENT LES UTILISER ?

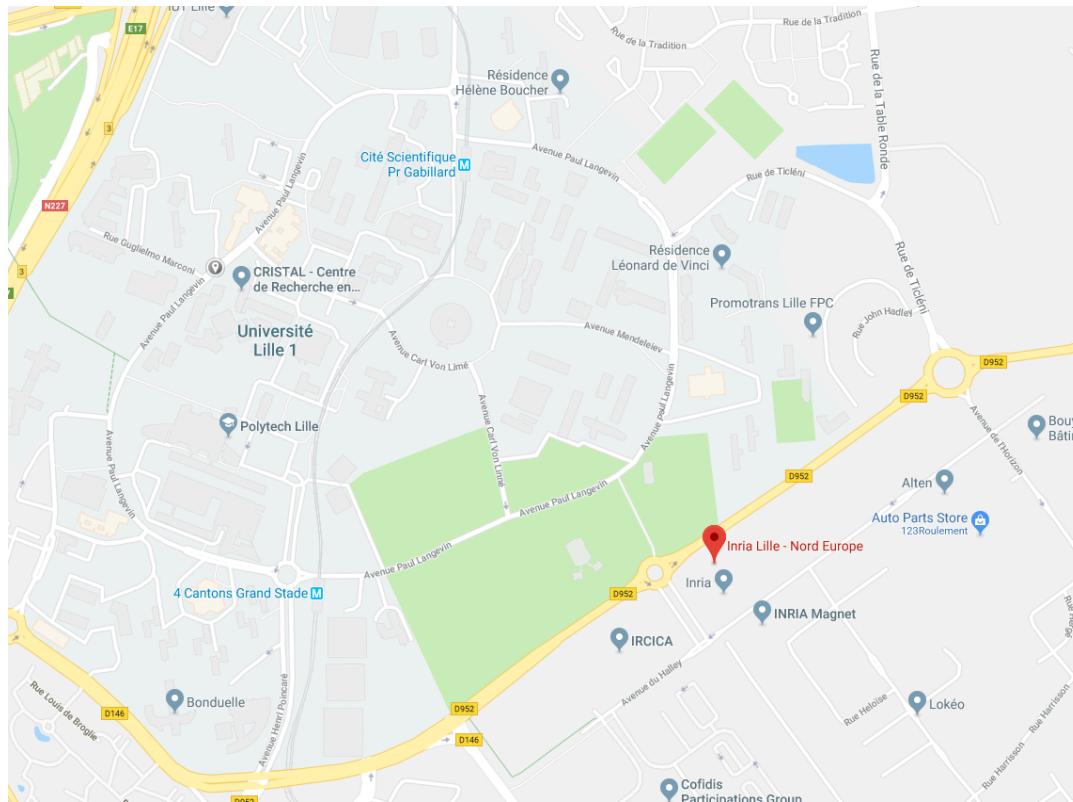
- Autant que vous voulez
- Mais gardez-les courtes !

PENSEZ À LA CÉCITÉ AUX CHANGEMENTS

- Votre application ne sera pas toujours visible
- Aidez l'utilisateur à identifier les changements

Stages en IHM (équipe Mjolnir)

- Stages orientés recherche (6 mois)
- Lieu d'accueil : Inria Lille
- <http://mjolnir.lille.inria.fr/jobs.html>



Technologie pour la détection des doigtés du pianiste

Encadrement

Stéphane Huot (stephane.huot@inria.fr) & Géry Casiez (gery.casiez@univ-lille1.fr)

En collaboration avec Hugues Leclère (CRR de Paris)

Contexte

Dans le cadre de leur pratique, les pianistes (professionnels ou amateurs) ont besoin d'annoter les partitions des morceaux qu'ils travaillent avec des informations de doigtés (fastidieux).

Mission

Comparer différentes technologies matérielles qui pourraient être utilisées pour réaliser un tel système (caméras,, capteurs de mouvement, etc.) de manière robuste et non-intrusive

- Étude de l'état de l'art
- Caractérisation et classification des technologies pouvant potentiellement être utilisées
- Mise en place et conduite d'une étude
- Implémentation et tests d'un ou plusieurs prototypes matériels

Détails : <http://mjolnir.lille.inria.fr/jobs/2018-detection-doigtés-piano-fr.pdf>

Plateforme de simulation pour l'étude de la temporalité dans les interfaces

Encadrement

Mathieu Nancel (mathieu.nancel@inria.fr) & Sylvain Malacria(sylvain.malacria@inria.fr)

Contexte

- Systèmes interactifs supposent une instantanéité perception/action
- Hors il existe une latence côté utilisateur (pop-up) et une coté interface

Mission

L'objectif est de produire une plateforme de test et d'expérimentation qui pourra être utilisée dans plusieurs projets de recherche sur la temporalité des IHMs par exemple:

- évaluer les effets de différentes sources et amplitudes de latence sur les performances et l'utilisabilité d'une interface classique
- simuler des mises à jour visuelles survenant juste avant un clic, qui peuvent générer des erreurs de sélection ou d'activation
- permettre de faire passer des expériences contrôlées réalistes sur navigateur web
- Compétences OpenGL, connaissances WebGL

Détails: <http://mjolnir.lille.inria.fr/jobs/2018-platform-temporality-fr.pdf>

Du graphe 3D au PDF

Encadrement

Sylvain Malacria (sylvain.malacria@inria.fr) & Géry Casiez (gery.casiez@univ-lille1.fr)

En collaboration avec la start'up Zébrys

Contexte

- Les dernières versions de PDF permettent d'intégrer des graphes 3D
- La production de ces graphes est néanmoins une tache compliquée

Mission

Votre mission sera de mettre en place une interface de production de graphes 3D, puis les options permettant de les exporter vers un fichier PDF

- Mise en place d'une démarche de conception centrée utilisateur
- Prototypage et évaluation
- Production du code final

Possibilité de poursuivre en thèse en cas de succès (CIFRE)

Détails: <http://mjolnir.lille.inria.fr/jobs/2018-graphe%203D-fr.pdf>

Éditeur de code intuitif

Encadrement

Stéphane Huot (stephane.huot@inria.fr) & Mathieu Nancel (mathieu.nancel@inria.fr)

En collaboration avec la start'up Zébrys

Contexte

- Outil utilisé par des statisticiens (pas nécessairement programmeurs)
- Écrire du code est une tâche ardue

Mission

Mettre en place des outils qui simplifieront le codage, faciliteront sa relecture et permettront un débogage aisément

- Mise en place d'une démarche de conception centrée utilisateur
- Prototypage et évaluation
- Intégration des innovations dans l'éditeur de code de R++ (déjà existant)

Possibilité de poursuivre en thèse en cas de succès (CIFRE)

Détails: <http://mjlnir.lille.inria.fr/jobs/2018-EDI-fr.pdf>

Stages en IHM (équipe Mjolnir)

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- Lieu d'accueil : Inria Lille
- <http://mjolnir.lille.inria.fr/jobs.html>

