BENAISSI Sellami

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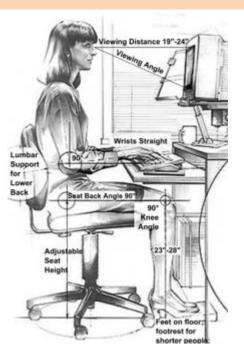


UI

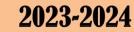
Ergonomic criteria

JHM



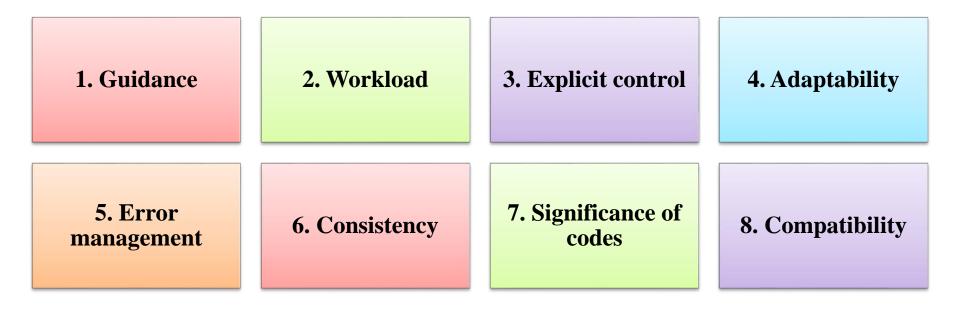






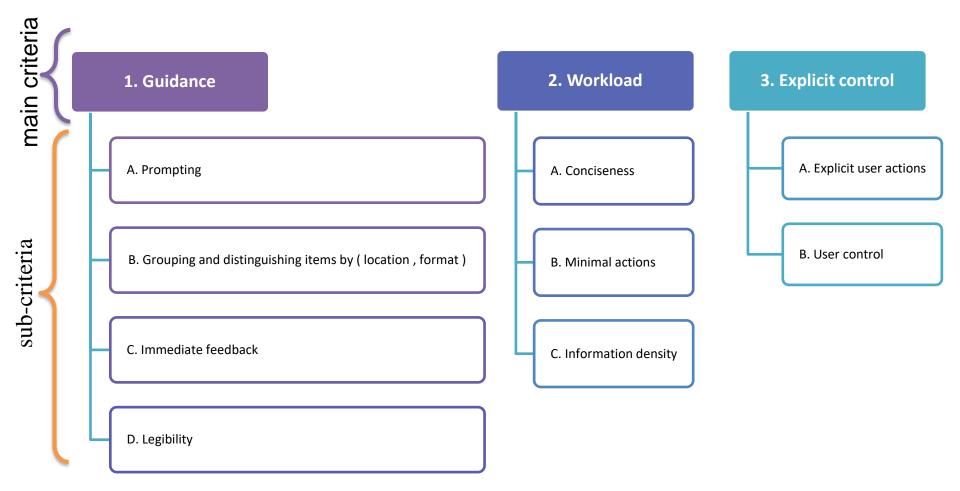


Bastien & Scapin Ergonomic criteria Rappelle

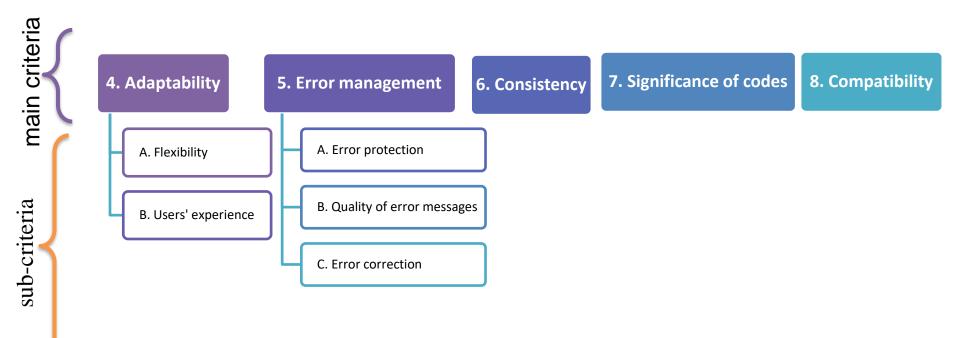


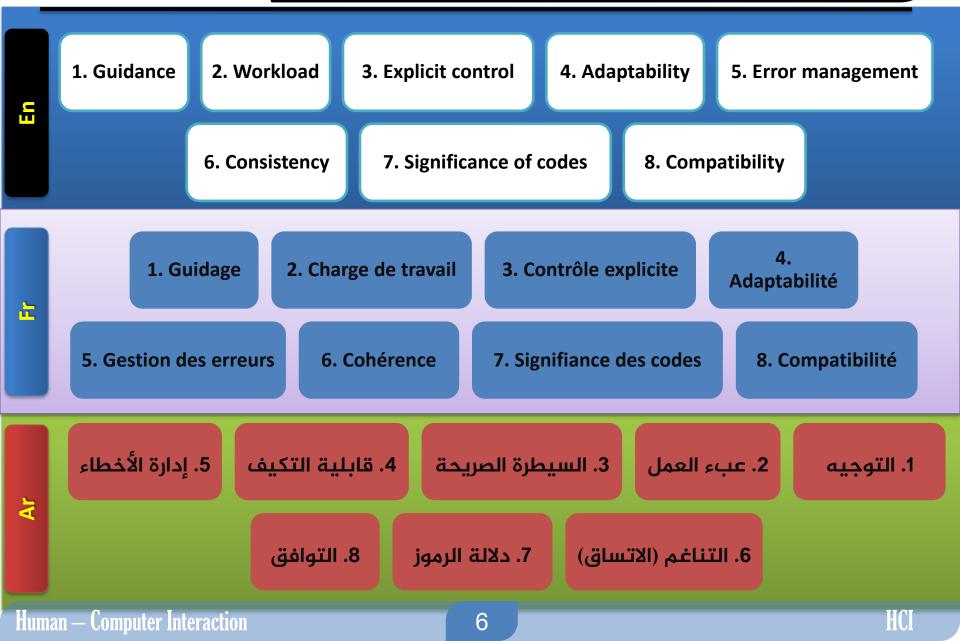
The Bastien & Scapin ergonomic criteria are divided into main criteria and sub-

criteria



The Bastien & Scapin ergonomic criteria are divided into main criteria and sub-criteria









1. Guidance

Guidance is the first of the eight Bastien & Scapin ergonomic criteria. It refers to the way in which a user interface **guides the user through their actions**. A well-designed interface should provide **clear** and **concise instructions**, **feedback**, and **cues** to help users understand what they need to do and how to do it.

The guidance criterion brings together all the means implemented to assist the user in using the software.

- Make the user **aware** of the state of the system and **allow** him to establish **the causal links** between his **actions** and the **resulting** state.
- The objective is **to facilitate** the **use** of the system and its **learning**.
- The user must **understand** the interactions expected of him through operation that appears clearly (less hesitation).

1. Guidance

The importance of guidance:

Guidance plays a crucial role in user experience, as it directly impacts the ease of use, efficiency, and satisfaction of the user. Effective guidance can:

- **Reduce cognitive load:** By providing clear instructions and cues, the interface minimizes the mental effort required for users to understand and navigate the system.
- **Minimize errors:** Clear guidance helps users avoid making mistakes, reducing frustration and saving time.

Enhance task completion: By providing a clear path through the system, users can efficiently complete their tasks without getting lost or confused.

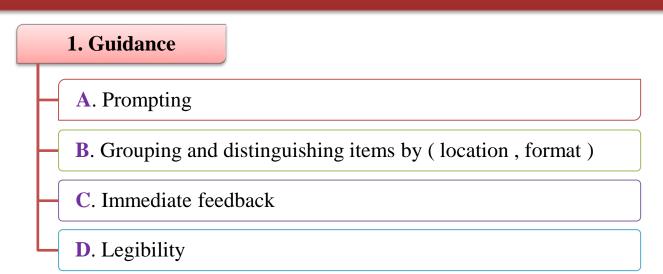
Improve user satisfaction: A well-guided interface fosters a sense of control and confidence, leading to a more positive user experience.

1. Guidance

We distinguish

- **Explicit guidance** (e.g. messages, tooltips, dialog boxes, etc.)
- * Implicit guidance (e.g. graying out inactive functions, other tricks, etc.)

The guidance criterion is broken down into four sub-criteria:

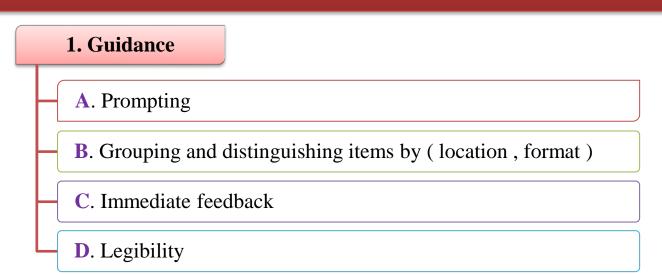


1. Guidance

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Bastien & Scapin Ergonomic criteria

A. The prompting criterion

The prompting **En**

L'incitation

Ar التلقين (المطالبة)

In the context of user interface design, prompting refers to the technique of providing users with cues or suggestions to guide their actions and decisions. These prompts can range from simple labels and instructions to more elaborate suggestions and recommendations. The goal of prompting is to help users complete tasks efficiently and effectively while minimizing errors and frustration and avoiding tedious learning.

The prompting criterion brings together the means aimed at leading the user to carry out specific actions.

- The prompting helps the user in their interaction with the software by providing them with the necessary elements to use it correctly.
- It avoids tedious learning and reduces the risk of error.



Recommendations:

- Gray out unavailable functions (menu options, buttons, etc.)
- Provide the list of expected entries (drop-down lists, codes to use, etc.)
- ✤ Give the data entry format (dates, dimensions, etc.)
- Change the shape of the cursor (mouse pointer) to give indications on the operation to be performed
- Clearly indicate the mandatory fields (* or other indicator)
- Clearly show how to go forward and backward
- Display tooltips (Tooltips) on non-trivial elements (toolbar icons for example)

Bastien & Scapin Ergonomic criteria

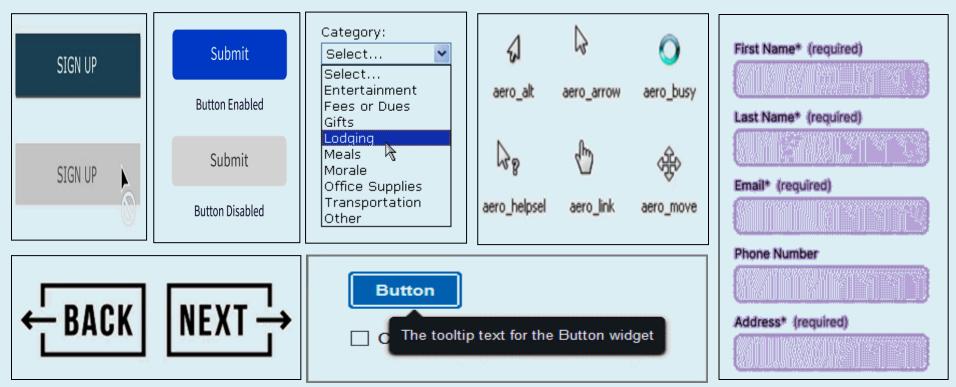
A. The prompting criterion

The prompting **En**

L'incitation

Ar التلقين (المطالبة)

Recommendations:



Bastien & Scapin Ergonomic criteria

An example of a successful Prompting:

- The subscriber number is divided into three blocks of three digits
- Once a first block is entered, the cursor moves automatically to the next block

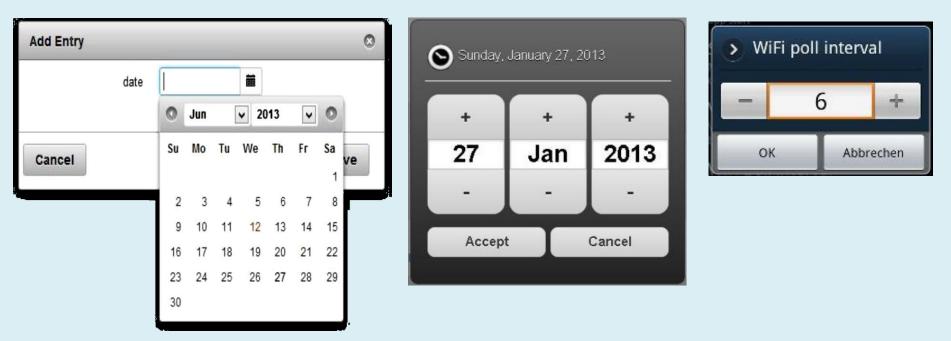
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VOTRE AÉROPLAN		
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	Pas encore membre ? Des primes qui en disent long	
Bienvenue aux membres Aéropian	Des primes qui en disent long. Tout au long de l'année, des millions de membres	
Bienvenue aux membres Aéropian Ouvremente session pour voir les miles Acropias defenus, réserver des primes en ligne, et bien plus	Des primes qui en disent long.	
Blenvenue aux membres Aéropian Ouvres and session pour voir les miles Aeropia abienus, réserver des primes en ligne, et bien plus encore	Des primes qui en disent long. Tout au long de l'année, des millions de membres téroplan obtiennent des milles Aéroplan chez plus de 100 binnières partenaires et profitent des milliers de primes	

Prompting

Bastien & Scapin Ergonomic criteria

An example of a successful Prompting:

- Prompt the user to enter the data correctly.
- Indicate or impose the format (dates, dimensions, units, etc.)



Prompting

Bastien & Scapin Ergonomic criteria

An example of a successful Prompting:

- Prompt the user to enter the data correctly.
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Human -

– Computer Interaction

Bastien & Scapin Ergonomic criteria

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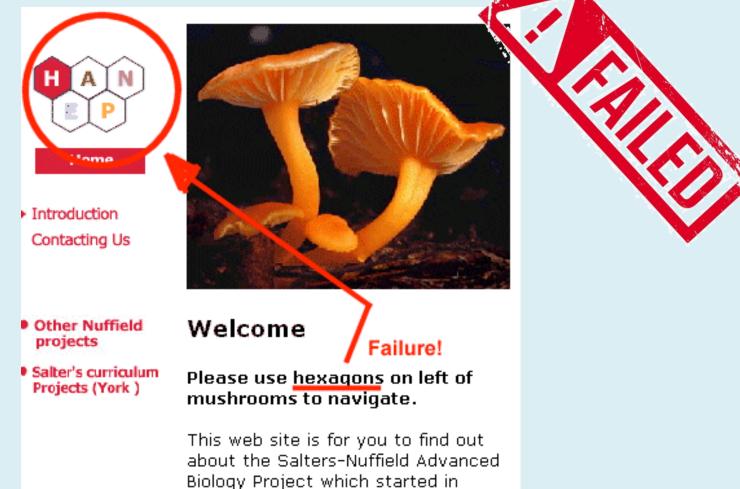
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Example of a failed prompting:

An example where the Prompting is so bad that we have to explicitly tell the user where to click



Bastien & Scapin Ergonomic criteria

B. Grouping and distinguishing items

Grouping and distinguishing **En**

Groupement - Distinction Fr

Grouping and distinguishing items are essential techniques in user interface design to help users organize, categorize, and differentiate between information effectively. By employing these strategies, designers can create interfaces that are visually appealing, easy to navigate, and cognitively accessible.

Product

Dashboard

Projects

Analytics

Account Information

User Profile

Billing

Settings

Yeak

Ar التجميع – التمييز

The grouping criterion consists of guiding the user by grouping information and functions of the same type. A user generally considers that what is similar will work in the same way (principle of similarity). Two graphic attributes are used for this purpose:

- The presentation format (color, shape, syntax, etc.)
- The position in the interface (location, border, etc.)

Conversely, the criterion of distinction consists of clearly separating or attributing distinct properties to objects that are different or that behave in different ways.

Bastien & Scapin Ergonomic criteria

B. Grouping and distinguishing items

Grouping

Grouping involves organizing related items together to create a **cohesive** and **meaningful** structure. This technique helps to reduce visual clutter, improve information scannability, and enhance the overall organization of the interface. Effective grouping strategies include:

- Proximity: Place related items in close proximity to each other to visually suggest their connection.
- Similarity: Group items that share similar visual attributes, such as color, shape, or size, to create a sense of unity.
- Closure: Utilize visual cues, such as borders, frames, or negative space, to enclose related items and distinguish them from surrounding elements.
- Hierarchy: Establish a hierarchy among groups by using different visual weights, such as size, contrast, or color intensity, to indicate the relative importance of each group.

Bastien & Scapin Ergonomic criteria

B. Grouping and distinguishing items

Distinguishing

Distinguishing involves making items stand out from their surroundings to emphasize their importance or draw attention to specific actions. This technique helps to guide users' focus and prevent them from overlooking crucial information. Effective distinguishing strategies include:

- Contrast: Employ color contrast to make important items stand out against the background.
- Salience: Utilize salient visual elements, such as bold fonts, vibrant colors, or unique shapes, to draw attention to key information or actions.
- Spacing: Create ample spacing around important items to isolate them from surrounding elements and prevent visual crowding.
- Movement: Use subtle animation or motion to draw attention to specific items or guide users through the interface.

Bastien & Scapin Ergonomic criteria

B. Grouping and distinguishing items

Recommendations:

- Group information of the same type by format or position (grouping by menus, surrounding with a border, etc.)
- Distinguish distinct information by a different presentation or a different location to avoid the risk of confusion

Bastien & Scapin Ergonomic criteria

Examples of recommendations:

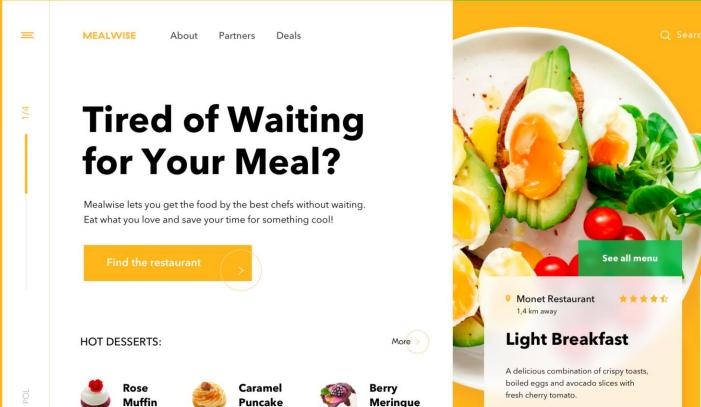
- links : Visited links differentiated from unvisited links
- Menu Structures: Group related menu items under clear headings and use visual cues to distinguish between different levels of the menu hierarchy.
- Form Fields: Group related form fields together and use labels, borders, and spacing to clearly distinguish each field.
- **Data Visualization:** Group **data points** based on **categories** or **attributes** and use **color**, **size**, and **position** to differentiate between them.
- **Content Organization:** Group **related sections** of content using **headings**, **subheadings**, and visual **dividers** to improve readability and scannability.

Bastien & Scapin Ergonomic criteria

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		distinguishing

Bastien & Scapin Ergonomic criteria

Grouping and distinguishing items m.



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2,2 km away Summer Bre

Double Bubble

Fragrant oatmeal with fresh strawberry and currant. Sen orange juice.

\$12

Order

Grouping - Visual Hierarchy

\$8

ENG

Bastien & Scapin Ergonomic criteria

C. Immediate feedback

Immediate feedback

En

Feedback immédiat

👃 ردود فعل فورية

Immediate feedback is a crucial aspect of interactive systems that provides users with **timely** and **relevant** information about the **outcome of their actions**. It is a design principle aimed at enhancing the user experience by offering **real-time responses** to user inputs or interactions.

The immediate feedback criterion brings together all the elements that serve to show the user what the system is doing and by offering him feedback in response to each of his actions.

• Compliance with this criterion, sometimes called "**user feedback**", goes a long way to increasing user confidence.

Bastien & Scapin Ergonomic criteria

C. Immediate feedback

Immediate feedback is Immediate feedback serves several important purposes:

- Confirmation and reassurance: Immediate feedback confirms to users that their actions have been recognized and received by the system. It provides a sense of reassurance and helps users feel in control of their interactions. This confirmation can be visual, auditory, or haptic, depending on the interface and the nature of the feedback.
- 2. Error detection and prevention: Immediate feedback helps users identify and correct errors or mistakes promptly. By providing instant notifications or alerts, the system can help users recognize incorrect inputs, erroneous actions, or potential issues before they cause further problems. This proactive error detection and prevention can save time and effort for users and contribute to a smoother user experience.

Bastien & Scapin Ergonomic criteria

C. Immediate feedback

Immediate feedback is Immediate feedback serves several important purposes:

- 3. Progress and status updates: Immediate feedback keeps users informed about the progress of ongoing processes or tasks. It provides updates on the status of operations, indicating when a task is complete or still in progress. This feedback allows users to stay informed and make informed decisions based on the current system state.
- 4. System responsiveness: Immediate feedback contributes to the perception of system responsiveness and interactivity. When users receive immediate feedback, it creates a sense of fluidity and responsiveness in the interaction, making the system feel more dynamic and engaging. This can lead to a more satisfying user experience.

Bastien & Scapin Ergonomic criteria

C. Immediate feedback

Immediate feedback is Immediate feedback serves several important purposes:

5. Reinforcement of user actions: Immediate feedback reinforces user actions, indicating that their input has had an effect on the system. This reinforcement can be positive, such as acknowledging successful completion of a task, or negative, such as signaling an error or invalid action. Reinforcing user actions through immediate feedback helps users understand the consequences of their interactions and reinforces their mental model of the system.



Bastien & Scapin Ergonomic criteria

C. Immediate feedback

To provide effective immediate feedback, designers should consider the following:

- Clarity and visibility: Feedback should be clear, concise, and easily noticeable, and distinct from the rest of the interface. It should be presented in a way that is easily perceivable by users, ensuring that they can quickly and accurately interpret the feedback. Avoid ambiguous or overly technical language.
- Relevance and context: Feedback should be relevant to the user's action or the task at hand. It should provide information that is meaningful and helpful in the user's current context.
- Timeliness : Immediate feedback should be provided as close to the user's action as possible, without introducing any noticeable delays. Timely feedback helps users establish a strong connection between their actions and the system's response. ideally within a few hundred milliseconds, to maintain the user's flow and sense of connection with the interface.

Bastien & Scapin Ergonomic criteria

C. Immediate feedback

To provide effective immediate feedback, designers should consider the following:

- Specificity: Feedback should be specific enough to identify the nature of the action or error, providing users with actionable information for correction or improvement.
- Appropriate Modality: Feedback can be provided through various modalities, such as visual cues, auditory signals, or haptic feedback, tailored to the context and user preferences.
- Non-intrusive Nature: Feedback should be non-intrusive and avoid disrupting the user's focus or workflow. It should provide necessary information without interfering with the overall interaction.
- Consistency: Feedback should be consistent throughout the system. Similar actions or interactions should produce consistent feedback to avoid confusion or cognitive load.

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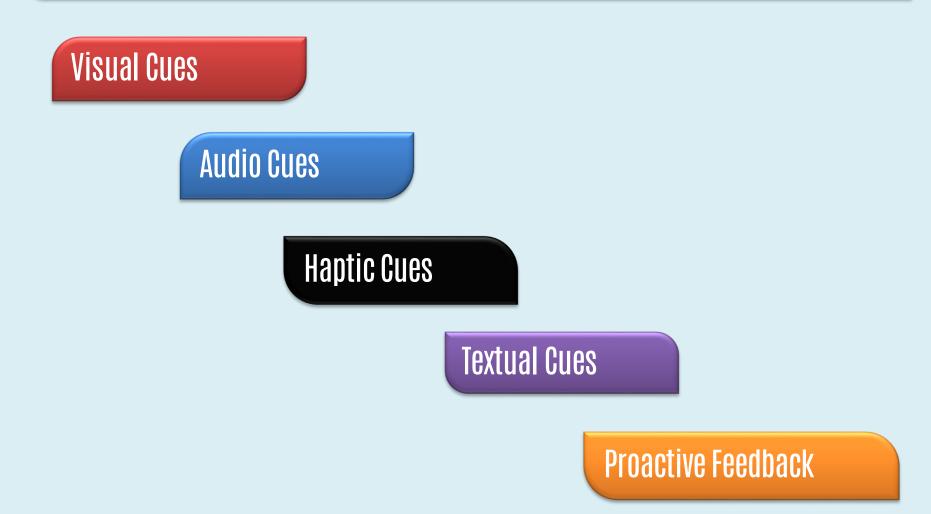
C. Immediate feedback

Immediate feedback can manifest in various forms, each tailored to specific contexts and user actions:

- Visual Cues: Visual cues, such as color changes, highlighting, or animations, provide immediate visual feedback about the validity or impact of user actions.
- Audio Cues: Audio cues, such as confirmation sounds or error tones, provide nonvisual feedback to supplement or reinforce visual indicators.
- Haptic Cues: Haptic cues, such as vibrations or force feedback, provide tactile feedback, particularly useful in mobile devices.
- Textual Cues: Textual feedback, such as error messages or success notifications, provides explicit and detailed information about user actions and system responses.
- Proactive Feedback: Proactive feedback anticipates user actions and provides suggestions or warnings before errors occur, further reducing user frustration.

Bastien & Scapin Ergonomic criteria

C. Immediate feedback



Bastien & Scapin Ergonomic criteria

Recommendations:

- ✤ The software must respond to any user action with a change in the presentation of the
 - interface (visual, audio, etc.)
- Indicate system operating modes (state)
- Indicate long processing times with a waiting indication (hourglass, progress bar, animation, message, etc.)
- ✤ Always show user input
- Make visible the processing carried out by the software and clearly indicate when they have failed

Bastien & Scapin Ergonomic criteria

Recommendations:

use auto-completion in search bars, form fields, code editors, and messaging apps, To reduce input time, improve accuracy, and enhance user experience.

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	ergonomique	Q
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	ergonomics meaning	Q
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Bastien & Scapin Ergonomic criteria

Recommendations:

C. Immediate feedback

Make current processing operations visible

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Bastien & Scapin Ergonomic criteria

Recommendations:

it is important to provide users with feedback about the validity of their input:Data type validation; Range validation; Format validation; Consistency checks



fields are directly checked upon entry



The legibility criterion is an important aspect of ergonomic design that focuses on ensuring that information presented to users is visually clear and easy to read. Legibility refers to the degree to which text, symbols, and other visual elements are visually distinguishable and can be easily understood by users. It plays a significant role in enhancing readability, reducing eye strain, and facilitating effective communication within interactive systems.

The Legibility criterion consists of facilitating the perception of textual and iconographic information through a judicious choice of their properties and their arrangement.Particular attention should be paid to:

- **fonts** (diversity, size, attributes, lower/upper case, etc.)
- **colors** in general (choice, contrast, etc.)
- the **arrangement** of elements (alignments, spacing, layout, etc.)
- icons (dimensions, choice of symbols, etc.

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D. Legibility

- 1. Font choice: Selecting appropriate fonts is crucial for legibility. Fonts should have clear and distinct letterforms that are easily recognizable. *Sans-serif* fonts such as *Arial* or *Helvetica* are commonly preferred for **on-screen readability**, as they have simple and clean shapes. Font size is also important, as text that is too small can be difficult to read, while text that is too large can disrupt the visual flow.
- 2. Contrast: Contrast between text and its background is essential for legibility. Sufficient contrast ensures that text is easily distinguishable from the surrounding elements. High contrast, such as black text on a white background, is generally recommended. Designers should consider the color combinations used and ensure that text stands out clearly against the background.



- **3.** Line spacing: Adequate line spacing, also known as leading, helps improve legibility. Sufficient vertical space between lines of text prevents them from appearing crowded or overlapping, making it easier for users to follow along and read the content comfortably.
- 4. Text formatting: Proper text formatting techniques can enhance legibility. Using appropriate alignment (such as left-aligned or justified), avoiding excessive use of capital letters, and using consistent text styles (such as bold or italics) for emphasis can make text easier to read and understand.



- Readability of symbols and icons: In addition to text, the legibility criterion also applies to symbols and icons used within interactive systems. Symbols and icons should have clear, easily recognizable shapes that convey their intended meaning. Avoiding complex or ambiguous symbols can help prevent confusion and improve overall legibility.
- 6. Accessibility considerations: Legibility is closely tied to accessibility. Designers should consider the needs of users with visual impairments or other visual challenges. Providing options for adjusting *text size*, *font styles*, and *contrast* can significantly improve legibility for users with different abilities.



improvements to enhance the readability of the interface.

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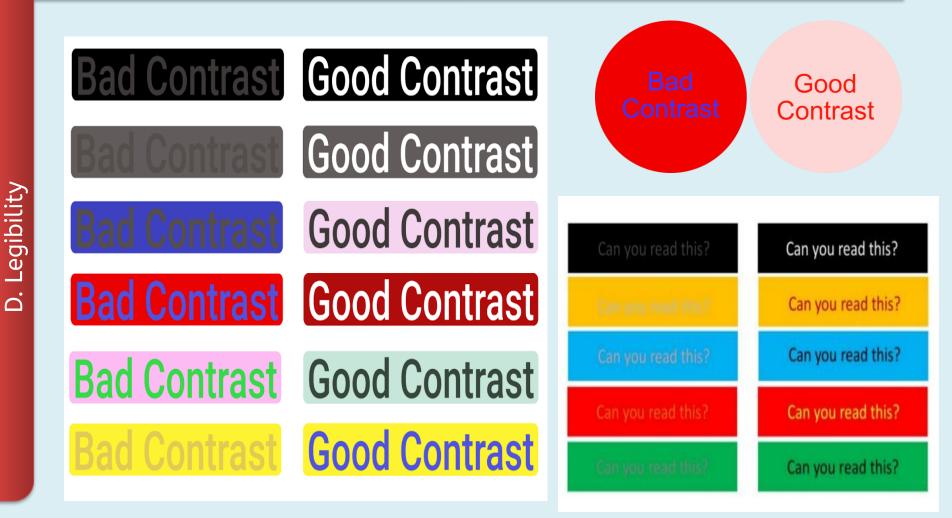
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Bastien & Scapin Ergonomic criteria

Legibility, Readability, and Comprehension:

Making Users Read Your Words

Bastien & Scapin Ergonomic criteria



Bastien & Scapin Ergonomic criteria

IT IMPROVES READABILITY & COMPREHENSION

HEADING

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged.



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Bastien & Scapin Ergonomic criteria

Conventional Icons & Meanings

