

# THE VISIONARY PURPOSE OF VISUALIZATION; A STUDY OF THE 'QUINNY HUBB' DESIGN CASE

JanWillem HOFTIJZER<sup>1</sup>, Mark SYPESTEYN<sup>1</sup>, Jort NIJHUIS<sup>2</sup> and Rik DE REUVER<sup>2</sup>

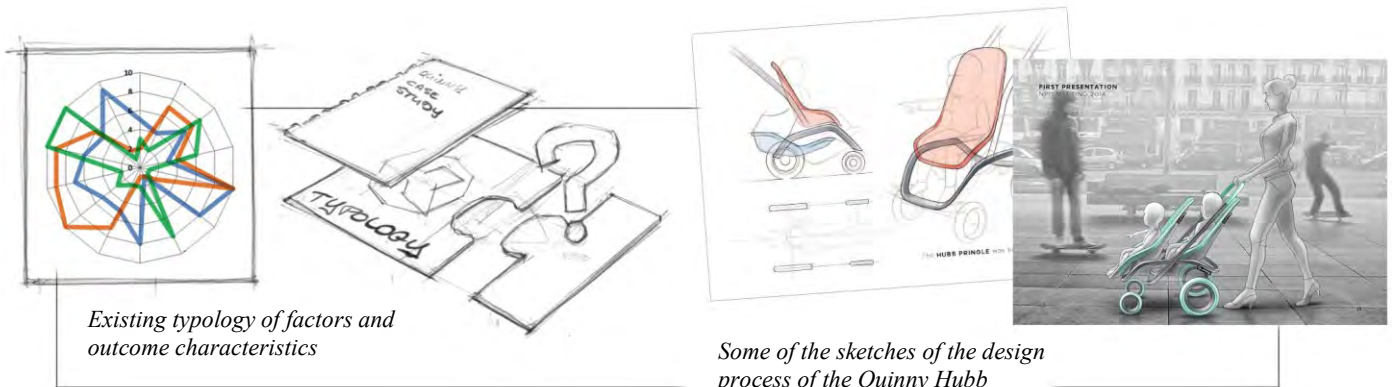
<sup>1</sup>Delft University of Technology, Netherlands

<sup>2</sup>Vanderveer Designers, Netherlands

*Keywords: Design sketching; drawing; visual paper; visualization; design case; strategic sketching; Vanderveer; Quinny*

## ABSTRACT

A new analysis of design sketches for the design of the Quinny Hubb stroller, by Vanderveer Designers, was executed to validate and/or complement the existing typology of design sketch factors and outcome characteristics, as described by Hoftijzer et al (2018).

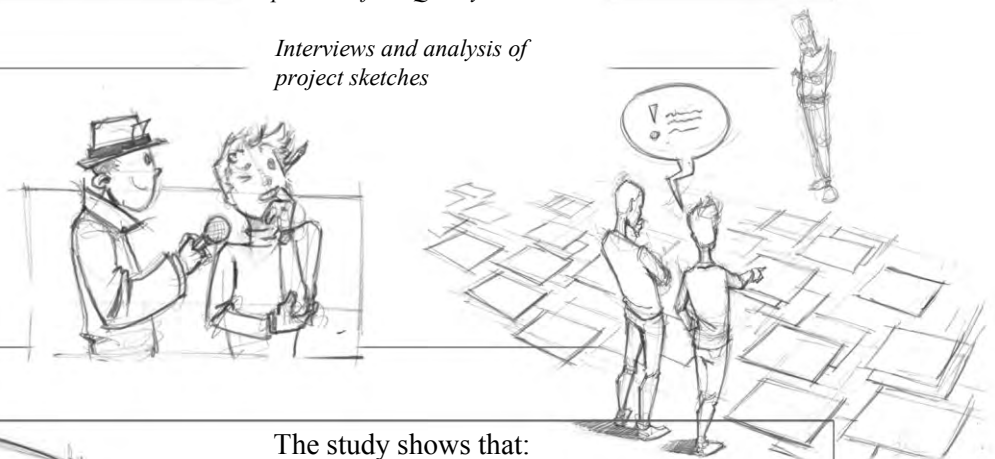


Existing typology of factors and outcome characteristics

Some of the sketches of the design process of the Quinny Hubb

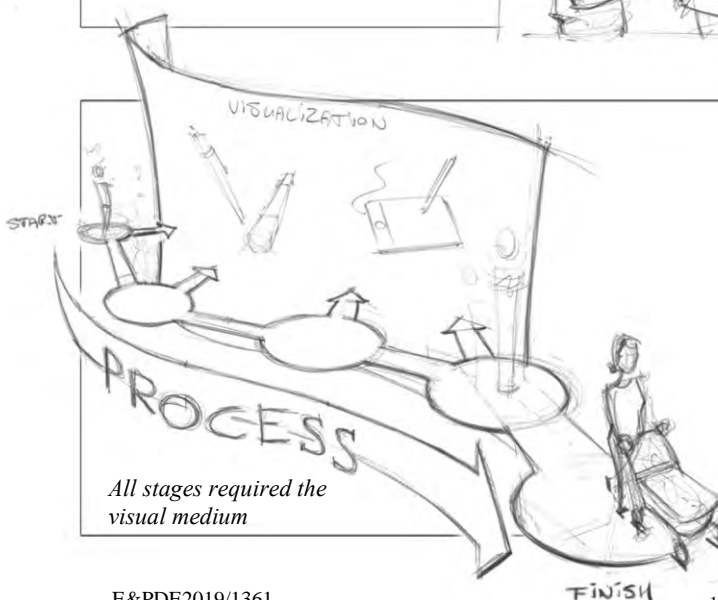
The specific roles sketches had in the process and for communication with the client were identified, with the use of interviews and by thorough analysis of available materials.

Interviews and analysis of project sketches



The study shows that:

- Drawings took a prominent and strategic place in the fuzzy-front-end design stages;
- They established and communicated a vision that was used to align the client organization;
- Drawings were a leading reference during the entire process;
- Technically, strategic sketches had a rather undefined character;
- Drawings allowed to focus on the character of the stroller before construction was addressed.



All stages required the visual medium

# 1 INTRODUCTION HUBB CASE/ BACKGROUND/ GOALS

After the Yepp case study and (preliminary) establishment of a new typology for design sketches [1], the question was raised how a different design case would fit within, complement or contradict this typology.

## 1.1 Current situation

The original typology shows different factors in combination with different aspects for a set of design sketches used throughout a comprehensive design process. It shows that different functions of sketches require a different approach, mentality and result in different aesthetic qualities (figure 1). This typology expands on several studies [2-4] in its attempt to explain the aesthetics of design sketches, charting contextual factors that could provide valuable clues for design sketching practice and -education. The question remained, however, whether (and to what extent) other design cases might map onto the proposed typology. This study aims to thus compare another design project with respect to the typology; what similarities are there, and which differences?

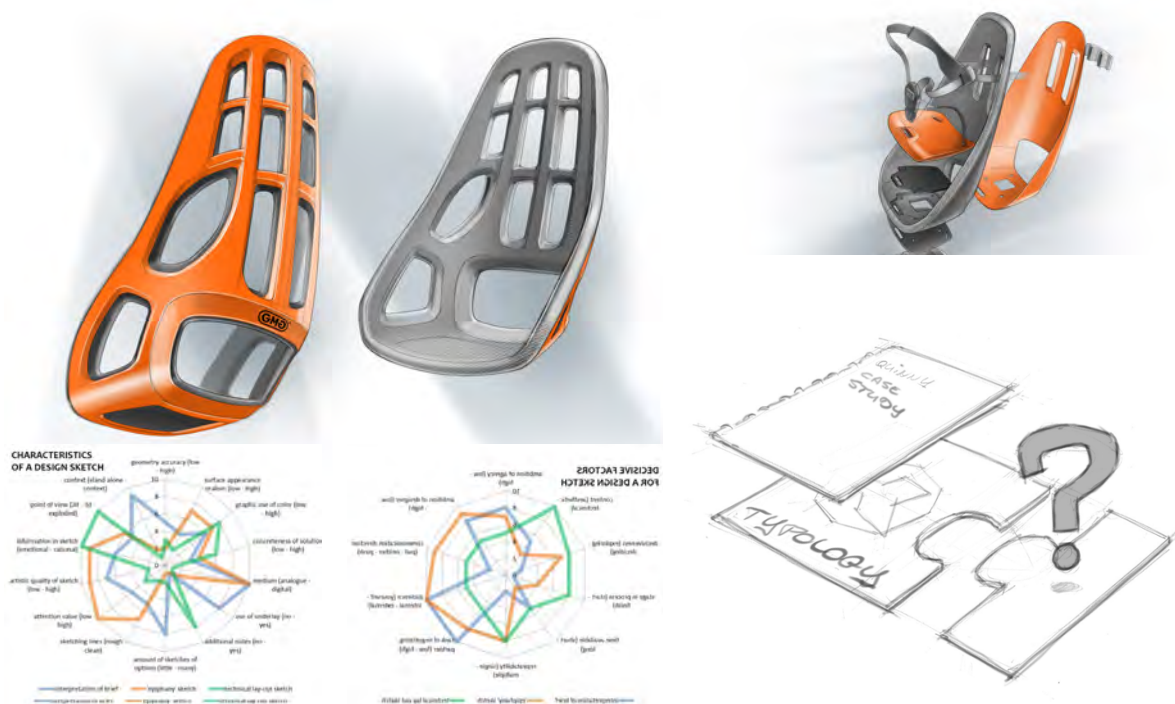


Figure 1. Taxonomic characteristics and factors that are decisive for the typology of a sketch in the design process of the Yepp Next (Hoftijzer et. al, 2018).

## 1.2 The Hubb case

The new Hubb case concerns the design of a so-called duo-stroller for parents with two children with a close age gap. The project set out from the wish of the client that the duo-stroller would also be an appealing product when used with a single child. Figure 2 shows the timeline of a duo-stroller usage cycle.

Vanderveer Designers were asked to provide the visual design as a strategic leading line for the stroller. Vanderveer is a Dutch design agency, focusing on product design in mobility. Many employees are graduates of the IDE faculty at the Delft University of Technology, as is the company's founder. The aesthetics would be the strategic advantage for the stroller, instead of the technical design, see figure 3. This led to an investigation of package configuration and characteristic aesthetic design, where more concrete elements and connections between these elements were not considered yet. The design brief read: create 'a close age duo-stroller, that still looks good in mono form' [5].

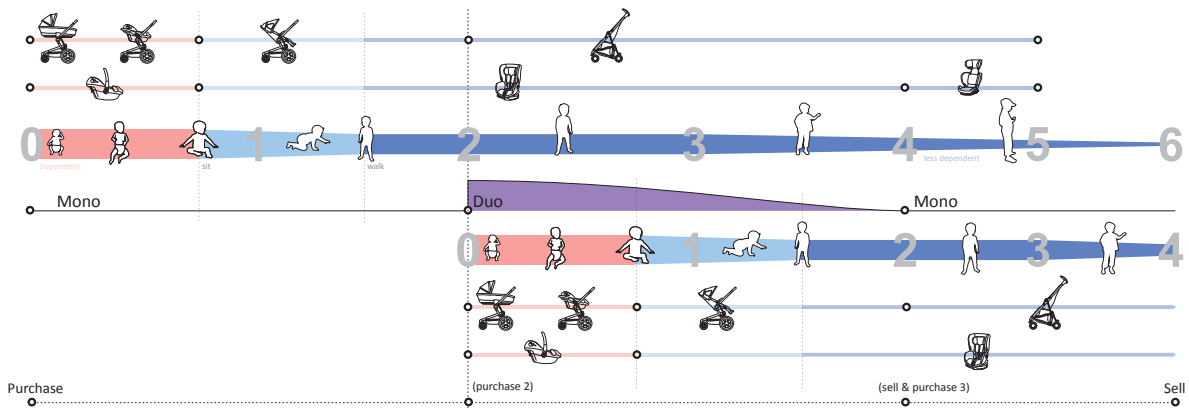


Figure 2. The timeline of the duo-stroller shows how one stroller is implemented in multiple stages; stage 1 shows the use with solely the first child, stage 2 shows the use with both children and stage 3 shows the use with solely the second child.



Figure 3. The vision and design intent were requested to be designed before considering feasibility from a functionality or engineering point of view.

## 2 HYPOTHESIS/ EXPECTATIONS

Since the designers were asked to aid in the establishment of the strategic advantage (aesthetics), it is expected that the sketches differ from the Yepp case in their role; here, the sketches might be more elaborate in their appearance from the start, while not offering any concrete solution to a specific design problem such as mechanics or production. See figure 4.

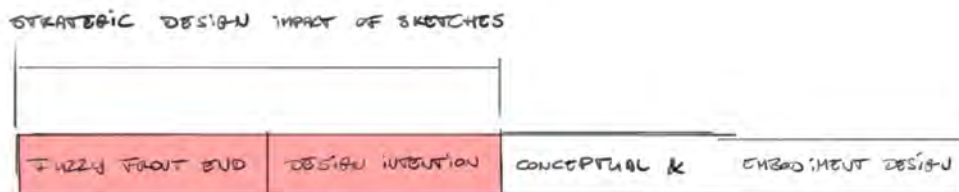


Figure 4. Sketches might initially not solve concrete design problems, but rather the more abstract problem of the desired 'design intent'.

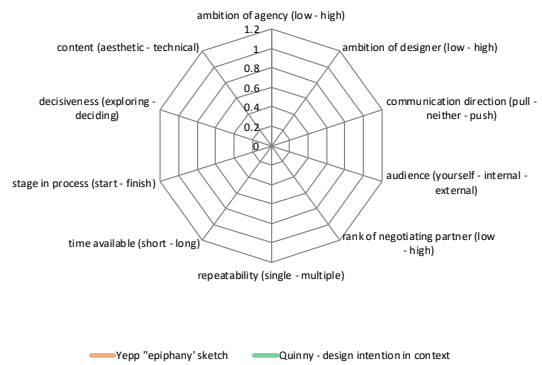
## 3 METHOD AND STARTING POINTS: THE YEPP NEXXT CASE

The case was studied extensively with regard to the appearance, context/background and function of all sketches produced during the project. The characteristics and factors of these sketches were compared to the Yepp case (figure 6). The lead designer and project manager of Vanderveer were interviewed during this examination to distill this information about the sketches.



Figure 5. The chronological arrangement of sketches and their analysis in collaboration with the lead designer and project manager of Vanderveer designers. All sketches were produced by the lead designer; models and prototypes were produced by other members of the design agency.

	Yepp "epiphany" sketch	Quinny - design intention in context
<b>FACTORS</b>		
ambition of agency (low - high)		
ambition of designer (low - high)		
communication direction (pull - neither - push)		
audience (yourself - internal - external)		
rank of negotiating partner (low - high)		
repeatability (single - multiple)		
time available (short - long)		
stage in process (start - finish)		
decisiveness (exploring - deciding)		
content (aesthetic - technical)		



	Yepp "epiphany" sketch	Quinny - design intention in context
<b>CHARACTERISTICS</b>		
geometry accuracy (low - high)		
surface appearance realism (low - high)		
graphic use of color (low - high)		
concreteness of solution (low - high)		
medium (analogue - digital)		
use of underlay (no - yes)		
additional notes (no - yes)		
amount of sketches of options (little - many)		
sketching lines (rough - clean)		
attention value (low - high)		
artistic quality of sketch (low - high)		
information in sketch (emotional - rational)		
point of view (2d - 3d - exploded)		
context (stand alone - context)		

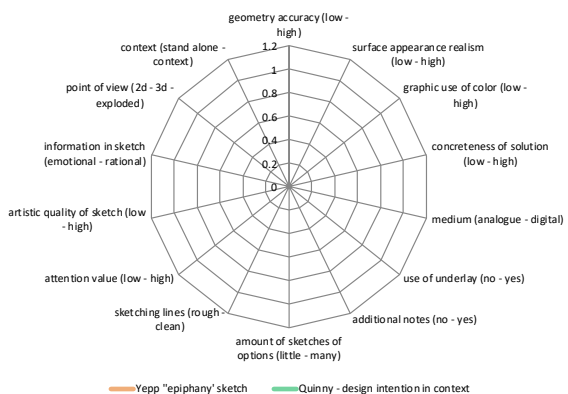


Figure 6. Sketches were rated in comparison to the Yepp case, based on the same factors and characteristics.

Figure 5 shows the sketches arranged chronologically and discussed by the designers. Key sketches that seemed to deviate from the Yepp case study where selected and analysed in comparison to the existing typology.

#### 4 RESULTS

A thorough study/analysis of the numerous sketches, which together form the representation of the design process, showed similarities compared to the 2018 typology.

Even more interesting though were those sketches that appeared to be of strategic value: they appeared to be very important in steering and guiding the entire design project. These sketches were created in the early stages of the project (the ‘fuzzy front end’ [6],[7]).

Figure 7 Shows an overview of sketches from different phases and their relation to the typology and highlights the ‘fuzzy front end’ ‘vision’ sketches. They are shown enlarged in figures 8 through 11.



*Figure 7. An overview of design sketches made during the entire design process. The sketches highlighted in green are those sketches that seem to offer strategic value during the fuzzy front end design stages.*

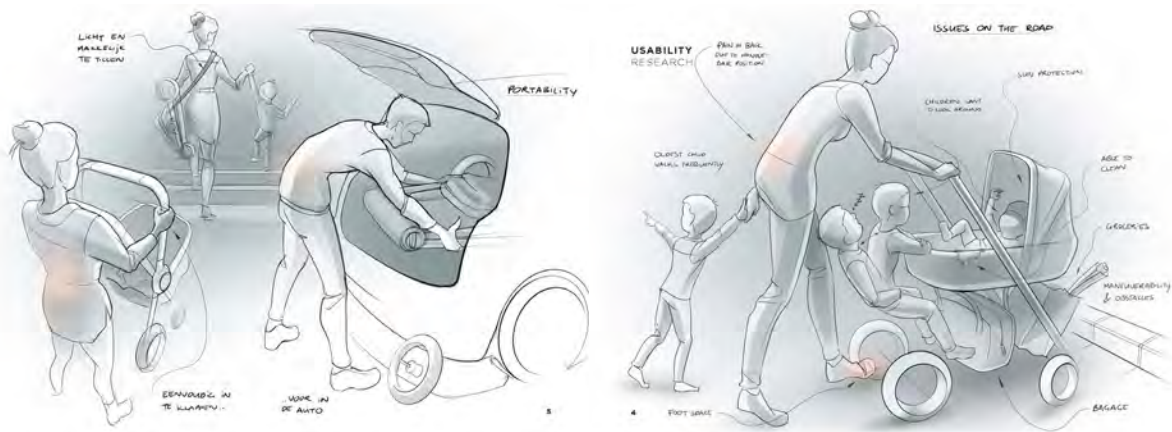


Figure 8. Consumer research. These sketches show certain issues occurrent in existing strollers, to be responded to by a target group audience. The sketches investigate current experiences of users, to strategically define a design direction.

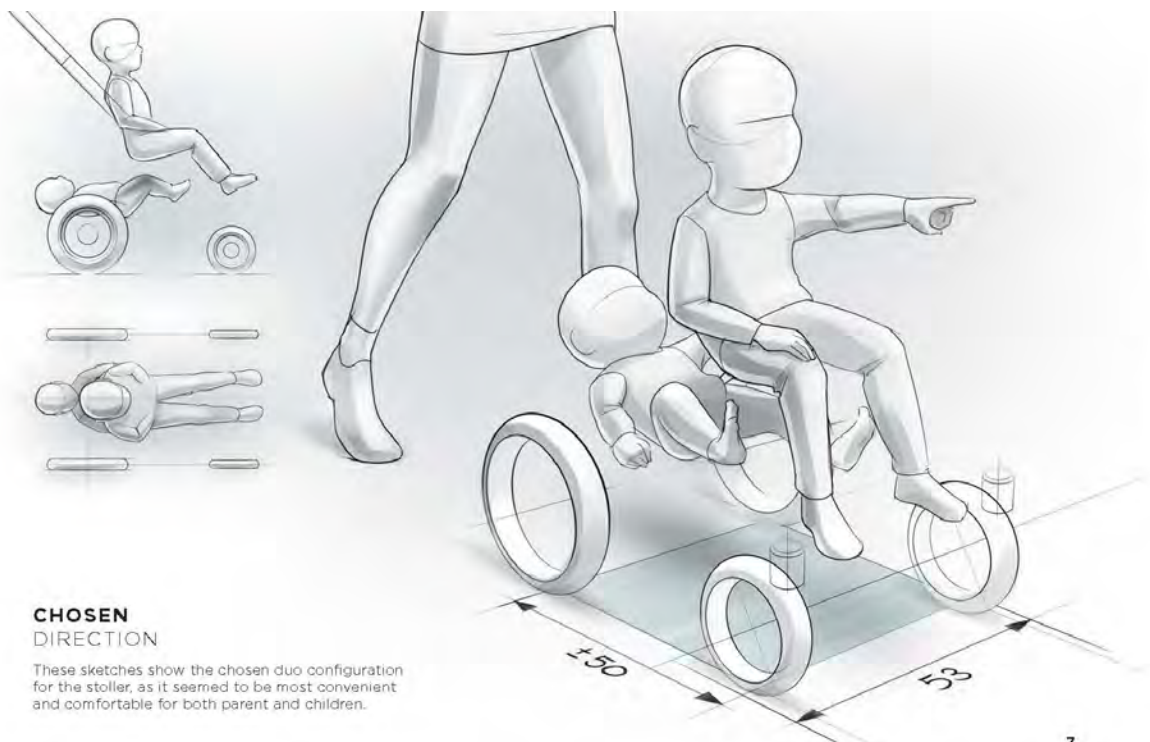


Figure 9. Preliminary positions of two children. Not so much exploratory in the product, as exploratory in use and package configuration; the ways in which two children, or one child plus luggage, can be positioned in a stroller.

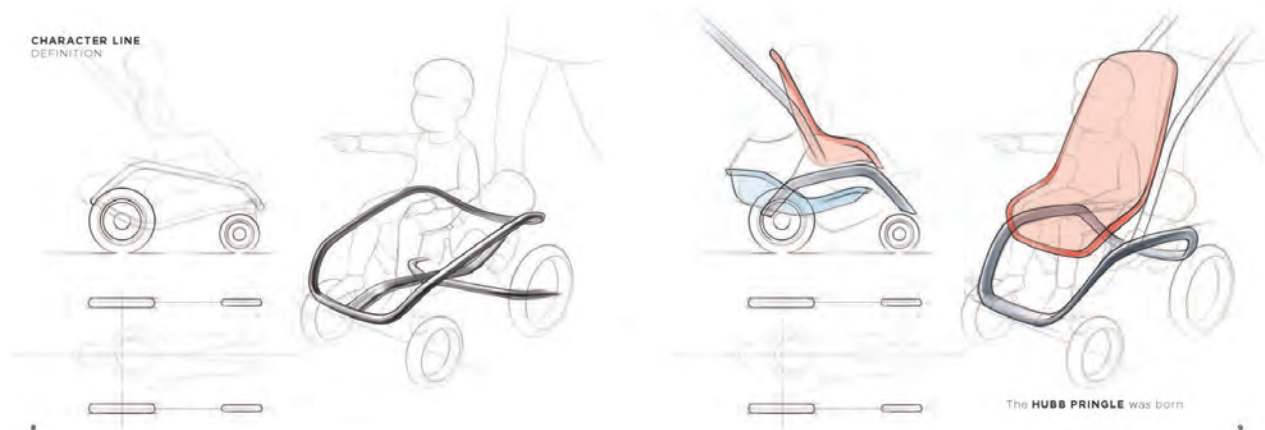


Figure 10. Abstract design direction / Aesthetic intent. This main design intent of the characteristic frame would prove to be the guiding design intent.



Figure 11. Design intention in context These sketches show the 'look and feel' of product, user and context. They complement the design intent to define a strategic framework, and communicate the way in which the stroller will set itself apart from competitor products.

#### 4.1 Consumer research (figure 8)

These sketches show certain issues occurrent in existing strollers, to be responded to by a target group audience. The sketches investigate current experiences of users, to strategically define a design direction.

#### 4.2 Positions of children (figure 9)

Not so much exploratory in the product, as exploratory in use and package configuration; the ways in which two children, or one child plus luggage, can be positioned in a stroller.

#### 4.3 Abstract design direction/ aesthetic intent (figure 10)

This concept was kept abstract as long as possible, so as not to deviate from this visionary design intent too much or too early, answering the rather strategic assignment Vanderveer designers had to perform.

#### 4.4 Design intention in context (figure 11)

These sketches show the ‘look and feel’ of product, user and context. They complement the design intent to define a strategic framework, and communicate the way in which the stroller will set itself apart from competitor products.

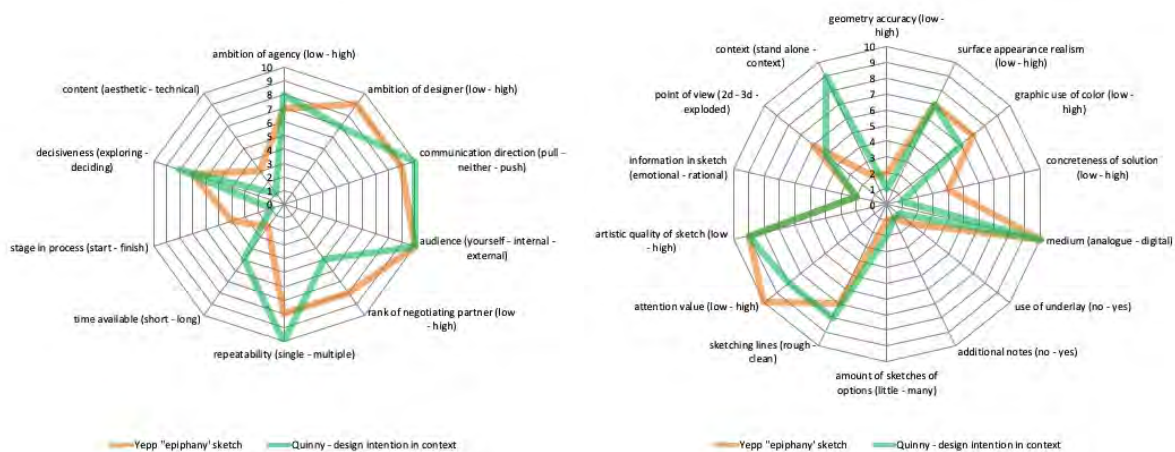


Figure 12. The ‘design intention in context’ sketch shows strong similarities to the ‘epiphany’ sketch from the Yepp case; its deciding factors (left) are indeed very similar, yet the Quinny sketch shows a higher repeatability factor. This is combined with a higher contextual characteristic (characteristic), leaving the question whether factor and characteristic are correlated.

## 5 DISCUSSION

The sketches show factors and characteristics similar to the ‘epiphany’ sketch identified in the Yepp case study (Figure 12). Factors that might influence the results for this design case are the relationship between the design agency and the client, as well as the ‘external’ role assigned to Vanderveer designers.

### 5.1 Client – designer relationship

In this case, the client put their trust in Vanderveer designers to solve engineering issues, and wished for an approach in which the vision about the stroller’s distinguishable appearance was leading. Based on the appeal conveyed by the strategic sketches, both client and design agency were confident that engineering problems would be solved without losing this aesthetic intent (figure 13). This trust was granted by the client, the more so since previous collaboration was carried out successfully by the design agency. The question remains whether such trust would be put into an agency that had not proven their competence through earlier collaboration.



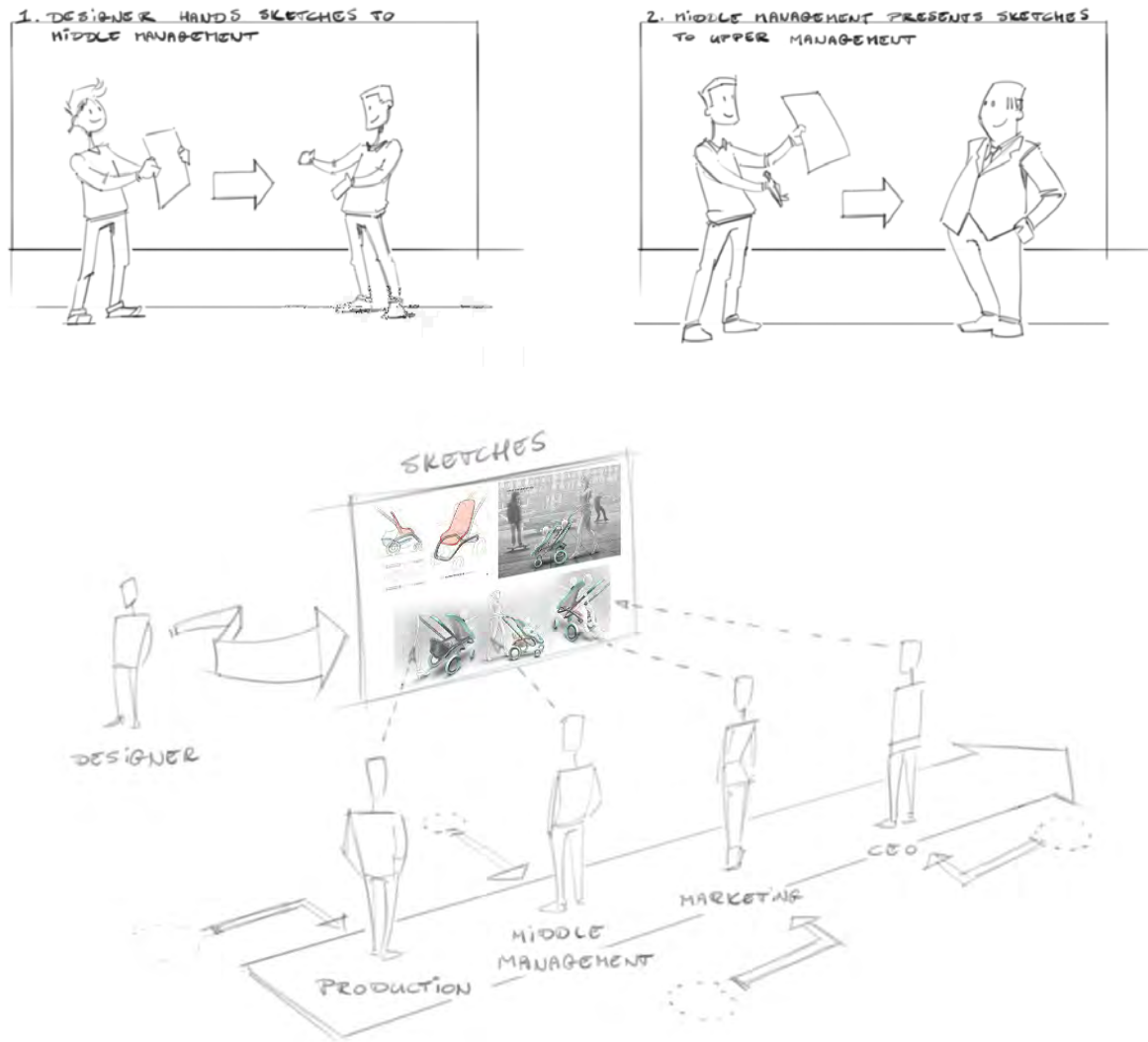


Figure 13. Sketches with a high repeatability are provided by the designer, and middle management uses the sketches to align the client's internal organisation.

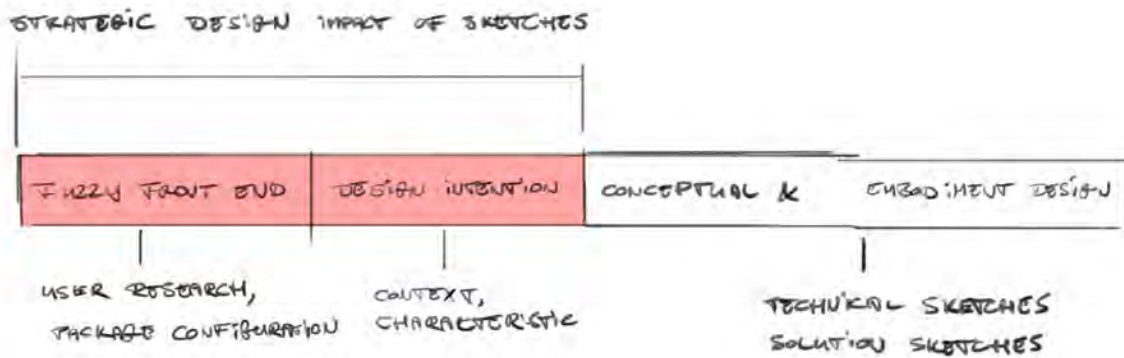


Figure 14. Mapping the four selected sketches onto the strategic design phase of the project.

## 5.2 Repeatability for alignment

The sketches done by Vanderveer, particularly those showing the visionary design intent, were also used throughout different departments and management levels within the client's organisation to align them (figure 13,14). It should be noted that this use involved discussions where the sketches were the topic, without the original creator – the designer – being present to elaborate on them. In other words: the sketches had to contain a high degree of repeatability, leaving little room for imagination on those topics that they meant to illustrate. This could explain the high degree of 'finished' rendering look in the sketches (materialization, photographic backgrounds etc.)

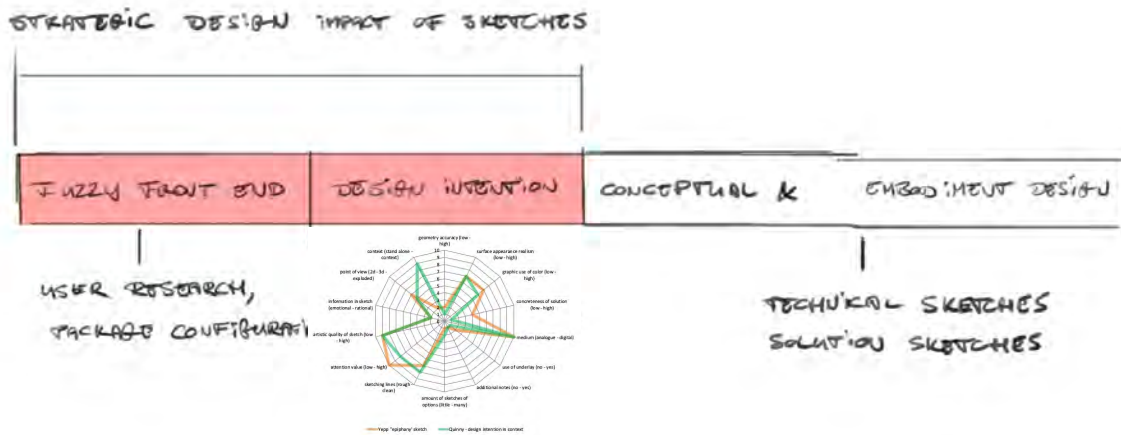


Figure 15. Could one expect the same characteristic typology in strategic design intent sketches for different projects and design agencies?

## 6 CONCLUSION

This case study shows quite some congruency with the Yepp case study.

The main extension to this typology is the visionary role of fuzzy front end sketches. These sketches show a high regard for rendering quality, while at the same time disregarding technical feasibility/concreteness. The 'push' factor is high. Sketches that served to investigate different use scenarios and were shown primarily to a focus group have a rather strategic function as well.

The sketch was often referred to at later moments in the project in order to stay as close as possible to that intent. To avoid discussions deviating from this design intent, parts were sketched as 'floating'; there were no solutions proposed for possible connections or mechanisms in these sketches. This leads the sketches to be a noticeable mix of realism and abstraction.

The case study confirms the hypothesis: the extension to the existing typology concentrates on the strategic stages and purpose of sketches. These sketches helped establish a visionary design intent, and functioned as a powerful tool to align several departments and levels of management within the client's organisation. The sketches show factors and characteristics similar to the 'epiphany' sketch identified in the Yepp case study (Figure 12). This shows a contradiction to the general notion that sketches from an early design stage can be 'rough' or 'sketchy'. The aesthetic depends on many other factors, of which the design practitioner and educator should be aware.

Future studies might involve case studies with different design agencies, to gain more insight in different design approaches. It would be interesting to compare the use of sketches from a different design agency to the Vanderveer studies and identify commonalities as well as differences (figure 15).

## ACKNOWLEDGEMENTS

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## REFERENCES

- [1] Hoftijzer, J.W. et al. A typology of design sketches, defined by communication factors; the case study of the Thule Yepp Nexxt child bike seat. *DS 93: Proceedings of the 20th International Conference on Engineering and Product Design Education*, 2018, pp 585-590.
- [2] Pei, E., I. Campbell, and M. Evans, A taxonomic classification of visual design representations used by industrial designers and engineering designers. *The Design Journal*, 2011. 14(1): p. 64-91.
- [3] Schenk, P., Developing a taxonomy on drawing for design. *International Association of Societies of Design Research*, 2007: p. 1-15.
- [4] Garner, S.W., Drawing and Designing - exploration and manipulation through two-dimensional modelling, in DATER Conference 1989. 1989, Loughborough: Loughborough University.
- [5] Vanderveer designers, *Quinny Hubb concept design*, unpublished work, n.d.
- [6] Zhang, Q. & Doll, W.J. The fuzzy front end and success of new product development: a causal model. *European Journal of Innovation Management*, 2001, 4(2), 95-112.
- [7] Khurana, A. and Rosenthal, S.R. Integrating the fuzzy front end of new product development. *Sloan Management Review*, 1997, 38(2), 103-120.