ROBUST DESIGN REVIEW CONVERSATIONS

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Devon  The impact I mean…the versatility I think is what’s strongly towards a couple of your ideas and I see this being a very versatile, functional piece and in fact you can use it as a table. What I would like to see is almost take the cushion…be removable from this as well, kind of what you did with the third concept so now you can remove the cushion, flip it over, sit on the cushion, use this potentially as a writing surface, and then you could also – [turning a model vertically]

Darron  Yeah, you could flip it up like that.

Male 5  And then you could also flip it vertically to now it’s a stand-at-height table possibly, um, so I mean I think the versatility – is definitely your strength on this one.
The impact I mean… the versatility I think is what’s strongly towards a couple of your ideas and I see this being a very versatile, functional piece and in fact you can use it as a table. [Devon, Client Review – Adam]

\[ p \implies q \]

IF versatile \((p)\) \implies THEN strong \((q)\)

\( p \)

this being …

very versatile \((p)\)

[because] you can use it as a table. \( q \)

[This concept] is strong \((q)\).
What I would like to see is almost take the cushion…be removable from this as well, kind of what you did with the third concept so now you can remove the cushion, flip it over, sit on the cushion, use this potentially as a writing surface…

[Devon, Client Review – Adam]

\[ q \quad \text{a given function: create versatility} \]

\[ p \Rightarrow q \quad \text{IF you can remove the cushion … THEN create versatility} \]

\[ p \quad \text{remove the cushion, flip it over} \]
robust design review conversation =

**design evaluation**
the determination of the quality (value or worth) of a design concept against established objectives as a function of one or more its attributes
+

**generative sensing**
creating new hypotheses to explain or resolve propositions in favor of or against a design concept, propositions themselves generated from an **evaluation** of the design concept
Roozenburg (1993) introduces the following notation to describe innovative abduction:

\[
\begin{align*}
q & \quad \text{a given fact: } q \\
\rightarrow & \\
\Rightarrow & \quad \text{a rule to be inferred first: IF } p \text{ THEN } q \\
p & \quad \text{the conclusion: } p \\
\end{align*}
\]

\[
\begin{align*}
q & \quad \text{a given fact: } q \\
\rightarrow & \\
\Rightarrow & \quad \text{IF a description of form and prescription of actuation THEN } q \\
p & \quad \text{the conclusion: } p \\
\end{align*}
\]

\[
\begin{align*}
q & \quad \text{a given fact (purpose, function): lift heavy loads} \\
\rightarrow & \\
\Rightarrow & \quad \text{IF a lever and moment about fulcrum THEN lift heavy loads} \\
p & \quad \text{the conclusion: a lever and moment about fulcrum} \\
\end{align*}
\]
It’s not gonna be something where you’re gonna have your tablet or laptop or anything. This is - to me, it’s a brainstorming, it’s informal meetings. There’s probably a whiteboard. [Gary, 1-ID-jr-FirstReview-Todd]

q a given concept: a casual chair

p ⇒ q first conclusion: IF it’s a brainstorming, it’s informal meetings
    THEN a casual chair

p second conclusion: it’s a brainstorming, it’s informal meetings
    (context of use)
A tacit signal of design concept quality

Todd  Yeah, it’s intriguingly with these three sections you’d be able to get completely different seating and have a little bit of out. I think the challenge is how do you connect them all.

Max  So what you have here it shows them sagged but if there was some sort of interconnection where you could actually pull that out and turn it into chair or-

…

Todd  Yeah. That could be cool.
Darren — Wha-, well, personally, personally I don’t see that once again, I don’t see that as a marketable model. I don't think it will be used in the way you think it is.

Well, what you got to realize is these guys are also in charge of keeping it clean as well as - to try to get in there and clean it - it's just - we have to look at things from a larger picture, and as cool, as cool as the concept is it may not be exactly right for this, for the project we're working on. But I see this form in the shape, with a little bit, think a little bit further and I think you got something.

... 

I just, I just don't know how we would make it, make it -
Nicole  Have you thought of this as a promotional item and those types of –?

…

Sabrina  We also envision we one day having this be like something – like envision that the trashcan is green, and it’s a promotional thing for a waste management. So half of our proceeds would go to a cause so that way everyone loves to give back [unintelligible] so that’s something that could also happen with our product.
Design review conversations should identify opportunities

\[ q \quad \text{given: function = to promote} \]

\[ p \implies q \quad \text{first conclusion: IF a promotional thing for a waste management THEN to promote} \]

\[ p \quad \text{second conclusion: a promotional thing for a waste management} \]

\[ q \quad \text{given: a promotional thing for a waste management} \]

\[ p \implies q \quad \text{first conclusion: IF half of our proceeds would go to a cause THEN a promotional thing for a waste management} \]

\[ p \quad \text{second conclusion: half of our proceeds would go to a cause} \]

\[ p \implies q \quad [\text{Things that give back } \Rightarrow \text{ are loved by everyone}] \]

\[ p \quad [\text{In promotional thing for a waste management}] \text{ half of our proceeds would go [give back] to a cause} \]

\[ q \quad [\text{A promotional thing for a waste management is}] \text{ loved}. \]
Design review conversations should both **evaluate** and **explore**

Max: You and I talking about the self-skinning foam quality up there. Um, have you thought about **durability issues or anything** since that is gonna be sitting on the floor and you want to flip it upside down and store it and possibly use the bottom?

Adam: Um, I personally, ah, in my heart of hearts, I, I just love the, ah, I just love the uniformity of, ah, just all one piece. But if you were worried about durability, I suppose you could put a rim on the bottom. Ah, and that would, ah, solve some durability –

Max: I, I liked this one from the start. And, again, I mean, I – you know with that self-skinning, one person sits down with a pencil in their pocket and there could be some issues. But if we can work through those issues, I really like it.
robust design review conversations

innovative abduction

existing frame → novel frame

diverging

PF+, SF+ → PF-, SF-

evaluate → explore

cconverging

lower uncertainty → high uncertainty

deductive reasoning