

Week 1 Summary

Having Fits about Tog

Critical Review of Tognazzini's *A Quiz Designed to Give You Fits*

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ABSTRACT

This is a critical review of Bruce Tognazzini's (Tog) clever little quiz to determine how well one knows the ergonomic principle known as Fitts' law. The quiz is more of a platform for Tog, a former Apple developer, to lambaste Microsoft's GUI and hold up his version of Apple's GUI as an example of correct Fitts' law implementation. I say his version as he certainly laments the direction Apple has taken since his departure. While the Fitts' findings are important, it is not the only, nor most important principle of interface design.

1. Fitts' law

Briefly, Fitts' Law is a well known principle used in interface design and other disciplines. Basically it says that a targets size and distance affect a users ability to reach it. Larger and/or closer targets are easier to hit than smaller more distant ones. Common sense really, when you think about it. Of course Fitts' law gives us a great regression equation to calculate just how much of an effect a target's size and distance have on a subject's efficiency. Something very important to a manufacturer laying out an assembly line. [1] Fitts' law has been adapted to computer user interfaces, specifically the use of a an input device to navigate on screen by Accot-Zhai's steering law. [2] Which is an extension of Fitts' law that is more useful to UI designers.

2. Taking the Quiz

Tog gives ten questions (in no apparent order) about interface design. The questions all deal with applying Fitts' law although he does not explicitly mention that as the tenth question asks what is the common theme of all the questions. He then goes over the answers to the quiz. The title certainly gives a big hint. I am not sure that he includes it when giving the quiz in interviews. [3] While the test could be completed in a few minutes I would guess

that there are many intrepid UI designers who could take the better part of an hour as the quiz definitely lends itself to nuance.

I have seen and taken this quiz before, thankfully not in an interview (a suggested use by Tog), so I knew the answers already. I think the first time I took it several years ago, I got 7 of 10. If you are passingly familiar with Fitts' law, the quiz is really quite trivial, as it is just the same question asked in different ways. Things I remember getting wrong the first time I did it, were the auto-hiding task bar (which I love, I don't care if it is not efficient), and the hierarchical menu bottleneck (never bothered me as an extensive user of both Windows and Mac systems).

The question related to balancing access time for pop-ups is really a near exact duplicate of the menu bottleneck question. So not only are 9 questions dealing with a principle with limited impact, two are practically identical. So I got this one wrong as well I vaguely remember as the issue never bothered me on Windows.

3. Not Everything Fitts

The only person who would have fits after taking this quiz is the completely clueless interface designer. Which is perhaps his target audience. The article certainly doesn't expand upon Fitts', nor does it reference any of the more applicable works since Fitts. It also does not suggest new ways to implement it that are not already well known to anyone involved in the field. So beyond the use as a purely educational tool, the quiz has no purpose other than to give Tog a chance to say how great his work on Apple's GUI was and how bad Microsoft's is in comparison.

He suggests using the quiz in interviews, but I would not want to waste an interviewee's and my time asking ten questions when all I need is to ask one. Can you explain Fitts' law and give me an example of its use in interface design? And maybe if I wanted to challenge them, ask them to explain when it is not so important to use.

It really seems a waste to me to have ten nearly identical questions to elicit the knowledgeability of a useful, but by no means most critical aspect of interface design. Clearly, Fitts' law has an effect on interface design. However, things like the actual functionality and the consistency of an interface are more important in my opinion. It does not matter how big and/or close a button is to the cursor. If it does not do what the user expects when clicking on it then it may as well not be there. Certainly if they have a hard time clicking on it that can make a user frustrated. However, unless they can't click on it at all, it is not a complete failure.

Solving some problems related to Fitts' law may make an interface less usable overall. For example Microsoft had personalized menus which hide items in a menu that are not used frequently. Yet it detracts from a user's ability to use extended features because they must click the expand full menu button to see all options. They are now getting rid of this after realizing what a mistake it was. [4] The idea, however, was to make it easier to access the frequently used items in the menu, shortening the distance for frequently used menu items that are lower on the menu normally as well as present fewer options to make selecting a target easier.

In my opinion, Fitts' law in itself, is only significant for novice users, as anyone who uses a computer for serious development or production, learns that the fastest way to manage the interface is via keyboard shortcuts. The moment they need to use a mouse they have already had to slow down their workflow immensely. Personally, I don't touch a menu unless I can't remember a keyboard shortcut. Or there is no other way. As for other applications of Fitts' law, it is certainly very important in the layout of a physical production work environment. However, on a screen, in some cases I don't mind being slowed down by auto-hiding of Mac OS X's dock or Window's task bar. I much prefer having the screen real estate available to the application.

Other problems in focusing so much on Fitts' law for interface design is the shortcomings as listed in the paper by Zhao. Most significantly, the author points out that Fitts is not necessarily applicable to drawing, dragging and clicking or other types of UI movements. [1]

4. Conclusion

Bruce Tognazzini is a well known expert of usability, and as a longtime Mac user I certainly respect his work. However this quiz/article lacks substantially, other than to entertain us Mac users who already know how inferior Windows is in everything, not just UI. To be fair this is the only article Tog has on Fitts' law and it is several years old. It is not like he is foaming at the mouth (although some of his criticisms of the new Apple OS do seem to be rather overheated). If you use this in your interview process for prospective interface designers, there is something seriously wrong with your screening process. Unless of course, you are using it as a means to engage in conversation. Better to ask them if they know Fitts' law and how they would apply it in their work. If you want to learn about Fitts' law and more about new areas of research related to its application read Zhao's paper.

References

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- 3 Bruce Tognazzini, *A Quiz Designed to Give You Fitts*, Ask Tog, February 1999 (<http://www.asktog.com/columns/022DesignedToGiveFitts.html>) accessed on January 13th, 2007
- 4 Jensen Harris, *The End of Personalized Menus*, Jensen Harris: An Office User Interface Blog, January 2006 (<http://blogs.msdn.com/jensenh/archive/2006/01/20/515328.aspx>) accessed on January 15th, 2007