
From DIY Tutorials to DIY Recipes

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Abstract

While online DIY (do-it-yourself) tutorials have increasingly gained interest both at CHI and in the DIY and Maker communities, there is not a lot of research concerning the qualities and drawbacks of the current formats used to share DIY knowledge online. Drawing on our current study of DIY tutorials, in this paper we propose an experimentation in which we ‘translate’ DIY tutorials from their current formats to a more traditional cookbook style format. We present two tutorials – the Cardboard Desklamp and the DIY Cellphone – with their translation and discuss what we learned from the translation process.

Author Keywords

Tutorial; sharing; cookbook; recipe; Maker culture; DIY.

Introduction

This project is part of an ongoing study about the practices of making and knowledge sharing in the Maker and DIY cultures. Tutorials are central to the DIY culture: they are a place to share knowledge, learn from others, and exchange with the community through commenting and asking questions [4].

Interestingly, online DIY tutorials have changed the way we learn new skills and techniques as well as how

we share our knowledge. Styles and formats of DIY tutorials are varied and include a mix of text, images, step-by-step instructions, and videos. Descriptive studies have shown how DIY enthusiasts share and learn through online tutorials (e.g. [9]), however, they often oversee the challenges and issues stemming from the formatting and presentation of DIY tutorials. In a current ongoing study, we have looked at the relationship between the presentation of DIY tutorials and the ease of making the DIY projects. We have seen the challenge of presenting all the necessary materials in a clear and concise way. Often a short list of materials is presented at the beginning of the tutorials, but is rarely complete. Secondly, we see a crucial issue with how the steps are presented and the sequencing of actions. Finally, accurate and relevant information is often missing, or lost through a long narrative describing the DIY project. These issues highlight the opportunity to rethink how DIY tutorials are formatted and how tools that support knowledge exchange could be formalized.

In this paper, we particularly focus on a new concept for formatting and structuring DIY instructions. We see great similarities between DIY practices and cooking practices and propose to look at cookbooks for inspiration on how to format DIY tutorials in a way that could address some of the drawbacks of current tutorials. According to social practice theorists (specifically Shove et al. [6]), practices are dynamic and are constantly evolving through the iterative changes their practitioners make. Warde articulates how practices also co-evolve: "*practices are not hermetically sealed off from other adjacent and parallel practices, from which lessons are learned, innovations borrowed, procedures copied*" [11:141]. The evolution of cookbooks going from an authoritative practice (from

renown chefs sharing their recipes to home cooks) to a peer-to-peer practice taking place in the blogosphere can be echoed in the transformation of DIY tutorials today. The study we present is of interest for DIY enthusiasts, as well as for HCI researchers and practitioners since it presents a proposition and reflection on how we construct tools to support online sharing of instructions.

Cookbooks

Cookbooks and the sharing of recipes started with experts and chefs sharing recipes in order to teach home owners (often housewives at the time) how to cook, but also how to set up a menu and a table. Julia Child, trained at the famous *Le Cordon Bleu*, co-authored in 1961 *Mastering the Art of French Cooking* [2], which aimed at making the traditions of French cooking accessible to the American market. This book defines the idea of the canonical modern cookbook or kitchen bible cookbook. In addition to providing a comprehensive breadth of recipes for every potential menu, it establishes the foundational knowledge for home cooking. For example, at the outset the cookbook authors provide clear explanation and step-by-step illustrations of basic skills like cutting vegetables, necessary kitchen tools, and essential but basic knowledge of wines [2].

The format and tone for cookbook instructions are normalized to ensure brevity, clarity, accuracy, and adequate preparation and timing of the recipes. We value how cookbooks bridge the competences and skills of a professional tradition to support an exchange with homemakers and amateur cooks. This ongoing sharing of recipes is a well formalized form of communication that continues online in blogs and cooking repositories.

Chilled fresh tomato soup

[Bold in the original]:

Makes about 3 Cups

One way to use surplus garden tomatoes. Peel seed and chop coarsely into a blender:

2 ½ cups very ripe fresh tomatoes

Blend briefly with:

1 cup cream

1 tablespoon parsley

1 tablespoon basil

Season to taste

Chill and serve with:

Lemon slices

Figure 1. Chilled fresh tomato soup recipe

Online blogs have given a space to many amateur cooks to share recipes, to answer questions from readers, and to become part of a community of home cooks. Various websites and systems have been explored in the HCI community in terms of how to support recipe exchange, recipe searches based on specific ingredients, allergies, or styles [8], and to encourage the Foodie movement [3].

We also observe how lines are being blurred between the DIY culture and cooking practices. An example that mindfully combines both practices is the *Instructables Restaurant*¹, a restaurant where everything (from food to furniture) is based on an *Instructables*² tutorial. Another example that shows how practitioners can include new elements in their own practice is the link between green-DIY and gardening. In our previous work [10], we have observed how the practice of green-DIY has borrowed ideas, competences, and materials from the practice of gardening (e.g. homemade vertical gardens from wood pallets).

Based on the practice theory idea that practices grow along side others and borrow from each other, we believe that the evolution of cookbooks (from renown chef authors to home owner bloggers) can inspire the development of DIY tutorials. We investigate how the practice of DIY tutorials, which is already a peer-to-peer practice, can learn from the history of cookbooks. Hence, we propose to write DIY tutorials in the fashion of recipes in a cookbook. In order to explore this idea, its opportunities, and its challenges, we present two 'translations' of DIY tutorials to recipes.

¹ <http://instructablesrestaurant.com/>

² www.instructables.com

Our study

We experimented by translating two DIY tutorials into cookbook recipe format. Our model for the translation is *The Joy of Cooking* [5], see figure 1 for an example, the Chilled fresh tomato soup recipe. Although there are various accepted formats for cooking recipes, this one is the most minimal, the one that presents only the bare essence of the recipe. We followed this list of principles to set up the translations.

- By scanning the recipe, the reader sees all the necessary ingredients (or materials) and quantities because of the bolded and single lined format
- Ingredients (materials) are presented in sequence
- Techniques are explicit (e.g. blend or chill) and presented in sequence
- The recipe (tutorial) outcome is presented at the beginning

We chose two tutorials that were already pre-selected in an ongoing study about the communication, efficiency and style of DIY tutorials: the Fattelo! Cardboard Desk Lamp³ and the DIY Cellphone⁴. Our team had already made the projects and we were familiar with the steps, materials, tools, and challenges of each tutorial. Those tutorials have different difficulty levels: the desk lamp has only a few parts and requires basic electronics knowledge. The DIY cellphone requires a great variety of parts, the use of a laser cutter and advance electronic soldering skills.

³ <http://www.fattelo.com>

⁴ <http://web.media.mit.edu/~mellis/cellphone/>

Original and New Recipe Format

We present the original and new formatted recipes for the two projects: see figures 2 and 3 for the Cardboard Lamp and figures 4 and 5 for extracts of the DIY cellphone.

Encompasses all directions of original.

Not included in original instructions, since the authors assume you purchase a kit only available in Italy.

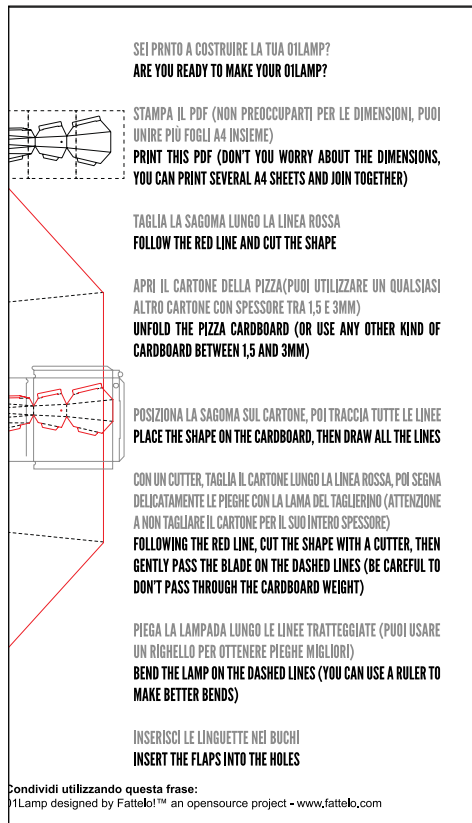



Figure 2. Original instructions for the Fattelo! Cardboard lamp © Fattelo!

Fattelo! Cardboard Lamp



Yields 1 cardboard lamp

Here's a simple use for those extra boxes you have lying around the house. First download and print the PDF:

<http://www.fattelo.com/en/#download-buy>

Follow patterns on PDF and tape together to make one large sheet. Cut around solid line outline of the shape on the papers. Tape cut out paper shape onto:

1 Sheet of Cardboard big enough to fit full sheet (e.g. pizza boxes).

Gently cut along the dotted lines, scoring the cardboard for later folding. Cut cardboard along the outside of the paper shape. Bend cardboard along scored edges to create the rough shape of a desk lamp. A ruler can be used to ensure straight lines. This will make up the frame for your lamp, set aside and grab:

1 Soldering Iron Solder

Preheat Soldering Iron to 315 degrees Celsius (600 degrees Fahrenheit). Cut a section from:

1 LED Strip

Then cut:

1 6V DC Wall Adapter

At the adapter plug end. Strip adapter wires 1/8" to reveal the wires for soldering. Place adapter wires and LED strip into:

1 Helping Hand

Ensure positive leads are connected together, negative leads are connected together, then solder wires.
Grab:

1 Cardboard Lamp Frame (previously made)

Feed adapter cord (with LED strip soldered to end) through cardboard structure. The LED strip should be at the top of the cardboard structure pointing down, and the adapter wire should be exiting the triangular hole in the back of the base of the structure. Tape the LED Strip in place so it doesn't fall (reversible tape works well for this). Also tape the adapter cord where it exits the base, to keep people from pulling on the LEDs when the wire is tugged. Plug in and enjoy your new desk lamp!

Include one image of the outcome of the tutorial

State the outcome of the tutorial

All tools and materials are bolded

Similar techniques are presented in the same paragraph

Materials and techniques are presented one after the other

Figure 3. Recipe format for the Fattelo! Cardboard lamp (photo © Fattelo!)

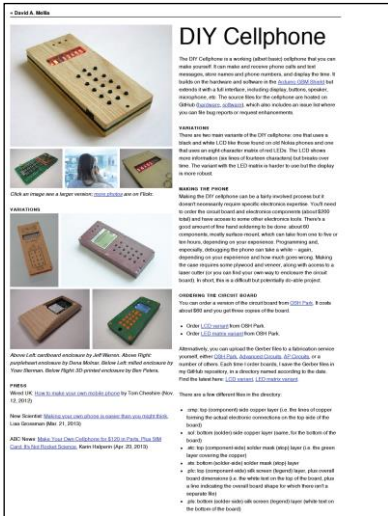


Figure 4. DIY Cellphone original instructions extract © David Mellis

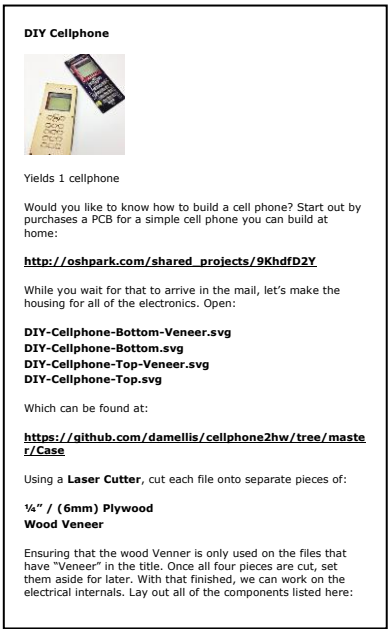


Figure 5. DIY Cellphone recipe format extract (photo © David Mellis)

Translation process

While being supported by the translation principles, the translation process included multiple steps that allowed us to go from the original to the recipe format. First, we placed in a table all the materials (with quantities), tools, and techniques by categories. Then, we created a sequential order for techniques, with their associated materials and tools. We were then able to put together a rough version of the recipe by alternating material and technique. From there, we regrouped some materials or techniques that were similar. Throughout the process, we had large sections to remove in some cases, and in other cases, we had to add entire sections to make the recipe understandable. For example, the DIY cellphone contained a lot of information on how to use the phone, which is unnecessary to understand the essence of the project. On the contrary, the cardboard lamp did not contain information about electronics, which we had to add to make the recipe complete. The translations show how both simple and complex tutorials can be translated to the recipe format.

Discussion

Through the translation process, we came across a variety of reflections and challenges that we present here. The minimal, structured, and sequential instructions presented in the recipe format of the DIY projects offer a new way to look at DIY instructions. In the translation process, we were able to see how the recipe format responds to some challenges we have observed in existing DIY tutorials. For example, the bolded materials throughout the recipe, in addition to preventing repetition, offer an easy way to see all the necessary materials in the project. Sequencing and accuracy were also addressed by following the 'one technique and one material per line' strategy.

Augmenting the translations

The minimalist approach to the recipe format has no room to explain in details the know-how to accomplish certain techniques such as soldering. Cookbooks often have a visual section describing basic techniques that serves as a common base for all the recipes in the book. We could see how this would be extremely useful in a cookbook of electronics DIY projects. In addition, translations can be augmented with new sections that present ideas for troubleshooting electronics, a section rare for recipes probably because of the ephemeral quality of cooking. However, in more advanced DIY electronic tutorials such as the DIY cellphone, troubleshooting is useful. We can consider adding a space for discussing common problems to the recipes.

Limitations of the recipe approach

Through the experiment of translating DIY tutorials towards recipes, we have realized the limitations of this approach. Firstly, the minimalist style of the recipes does not leave room for rich media like multiple photos or video. However, we see in the recipe format a way to structure and navigate tutorials that are straightforward and that can support at the same time an overview of the project and detailed information about the different steps. Secondly, the recipe approach demands that the longer narrative surrounding the reasons for making a build be removed, though we see the importance for motivating a build. We support the presentation of a one-sentence explanation, similarly to the Tomato Soup recipe: "One way to use surplus garden tomatoes." (see figure 1).

Implications for HCI and future work

In this work-in-progress, we see three implications for HCI and interaction design. Firstly, we think that the

recipe format is a concept that can help us reflect on and rethink how we design tools to support DIY tutorials and peer-to-peer knowledge sharing. By constraining authors to present only the bare essential to make their project, we might be able to have more uniform, and more importantly, more accurate tutorials. Secondly, we see an interesting link between, not only the practices of DIY and cooking, but between the research practices in HCI around the topics of DIY and cooking. Previous HCI research about recipe writing style [1], recipe recommendation and social navigation [7,8], and multimedia cooking aids can inspire new changes in DIY tools for tutorials. We also see the translation process as something that can be used between various practices, other than cooking and DIY.

Our future work will include more translations of DIY tutorials with the goal of creating a cookbook – physical and digital – (with a basic technique section at the outset of the book). We aim at seeing how DIY enthusiasts will work with the cookbook and how it will change their process of making. Finally, we also intend to work on a hypermediated form of the recipe format in order to explore how we can add rich media.

Conclusion

To conclude, we presented a translation process from DIY tutorials to DIY recipe format. We have presented the principles we used as well as the process we followed. We believe that this work is the first step towards a streamlined, clear, concise and minimalist description of DIY projects.

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