

Chinese Medicine Cabinet

Overview

A drug filing and storage system is essential for any form of medical treatment. Chinese medicine cabinets are used in Traditional Chinese Medicine (TCM) to store, categorize and dispense herbal medicine. TCM, being built upon Chinese philosophy, differs a lot from western medicine. This case study explores the organizing principles behind Chinese medicine cabinets. Chinese medicine cabinets are a type of physical storage systems that contain a top shelf, a bottom shelf and many small boxes of equal sizes in between. There exist very few peer-reviewed papers on Chinese medicine cabinets. Historical texts show that Hua Tuo, a highly-regarded physician, invented the Chinese medicine cabinets ('Visualizing Chinese Medicine Cabinet', 2015). Unfortunately, he didn't document any instructions on how to implement a medicine cabinet. As such, the investigation on Chinese medicine cabinet takes an inductive approach. With a sample of blueprints of Chinese medicine cabinets as primary resources, this paper first discusses the organizing principles behind the medicine cabinets. Through analyzing the organizing principles, this paper then explores how the design of Chinese medicine cabinets supports various interactions which are imperative for TCM practitioners and patients. The paper then connects the design of medicine cabinets with some of the core philosophies behind TCM.

What is being organized?

The resources that are being organized here are herbs. The scales of resources depend on the size of the medicine cabinets. For a standardized medicine cabinets (1.60m*1.70m), there are usually 64 boxes within the cabinets with each box contains three unique herbs ('Visualizing Chinese Medicine Cabinet', 2015). As such, one Chinese medicine cabinet usually consists of 200 different herbal medicines. The scope of resources is quite broad, containing herbs an average of

200 species. Furthermore, herbs, like other pharmaceutical products, have lifecycles. Some herbs have lifecycles of 1 – 2 years. Yet, some herbs, such as salvia, have lifecycle up to 10 years.

Why is it being organized?

Herbs are being organizing for the purpose of filing, storing, and eventually, dispensing drugs. Similar to the medication system in western medicine, patients get prescriptions, also known as *fangji*, from the doctors. Otherwise, they can also pick out some drugs themselves. Based on my personal experience of visiting herbal medicine stores, pharmacists also advise on specific combinations of herbs to take after being informed of the diagnosis. As such, the ultimate goal of the Chinese medicine cabinets is to facilitate pharmacist and physicians to take care of patients in need.

How much is it being organized?

The granularity of the resources is at a categorical level. Herbs of the same species and being produced at the same geographical location are considered and abstracted as a single entity. Thus, resource descriptions for this organizing system depend on two factors – herbs' species and origins. TCM takes the origins of herbs into consideration as well because herbs within the same species grown in different regions of the world may have different treatment effect. All resources are organized to the same degree.

When is it being organized?

All the resources are organized when they are brought in by herbal medicine suppliers to the pharmacies. Organizing Chinese medicine cabinets is not mandated by law or institutions. However, it is determined by some tradition and rules implemented in TCM.

How is it being organized?

Chinese medicine cabinets follow some organizing principles that are commonly observed in other physical storage systems. The top shelf has the most amount of storage area, and thus, jars are usually stored in the top shelf. The bottom shelf is used to store herbs that are heavy or come in large volume. Boxes in the middle are used to store herbs that are most frequently employed by TCM physicians. With the listed organizing principles as a general guideline, more specific and unique organizing rules can be concluded by taking a deeper dive into the blue prints.

Fig.1 shows the organizing structure of Chinese medicine cabinets. The orange columns are the largest building blocks. As mentioned, the origins of the herbs matter a lot. Thus, the orange columns contain herbs that are grown at the same geographical locations. As aforementioned, the origins of the herbs are part of the resource descriptions and matter a great deal to TCM practices and patients. Thus, the geographical locations of the herbs are written on top of the doors of the top shelf.

Since there are no formal names for the purple column, to differentiate it with all the orange columns, let's call all purple columns sub-columns. Herbs in sub-columns are organized by functions. For instance, Herbs in the second and the third sub-columns from the left are used to treat heat diseases.

Divide the sub-columns to the smallest building blocks of the Chinese medicine cabinets – boxes. Determining what kinds of herbs go into the same box depends on how different types of herbs interact with each other. Such interaction shall result in a balanced treatment. Balance is a core concept in Chinese medicine. To achieve balance in herbal medicine, four agents need to be present (Fig.2). Metaphorically speak, there needs to be an emperor, a guide, a minister and an assistant. Emperor targets the cause of the disease. The guide delivers or guides the herb. The minister

enhances the treatment effect. Assistant reduces side effects. One might consider the four agents represent a hierarchy. Yet, in the Inner Cannon of the Yellow Emperor (111CE), also known as Huang Di Nei Jing Su Wen, the relationships of the four agents were explicitly stated not as a hierarchical one. To further illustrate how the rule of a balanced treatment is being implemented in organizing the boxes of Chinese cabinets, consider the following example. You go to the doctor to see a common cold. The doctor writes you a *fangji* consisting of Herba Ephedra (also known as *Ma Huang*), lychee, almond and licorice root. Herba Ephedra would be the emperor in this case, targeting at major symptoms like fever. Lychee and almond are the ministers that helps you to sweat. Licorice root, in this case, works as both guide and assistant, direct all three other herbs and clear the side effect – bitterness. (The *fangji* listed here is extracted from Treatise on Cold Damage Disorders. Interpretations are all mine.) As such, Herba Ephedra, Lychee and almond shall be in one box. Licorice roots pair with many other herbs and come in large volume, which shall be stored in bottom. Looking at the blueprint in Fig.1, Herba Ephedra, Lychee and almond are stored exactly in one box, as the star indicated.

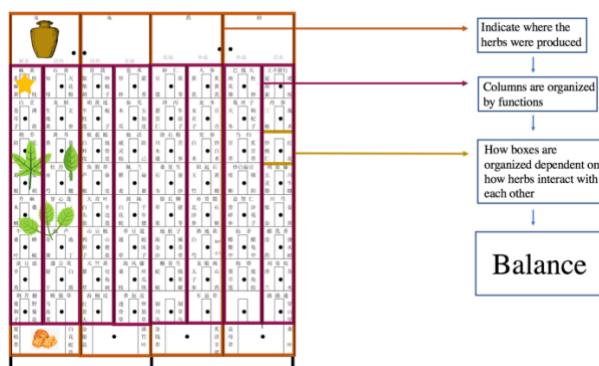


Fig.1: All orange columns are organized by origins. All purple columns are defined as sub-columns here. They are organized by functions. Each box is organized by how herbs interact with each other.

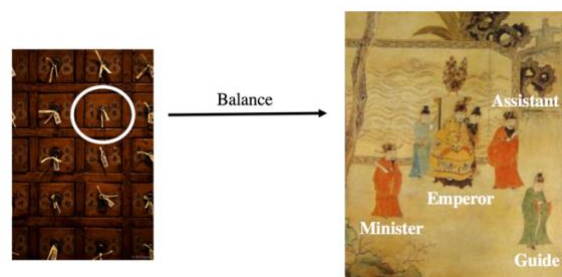


Fig.2: Four metaphorical agents need to be present to achieve a balanced treatment. Emperor targets cause of the disease. Guide delivers or guides the herb. Minister enhances the treatment effect. Assistant reduces side effects.

The organizing principles behind Chinese medicine cabinets make such system with high affordances. Users need to have an adequate amount of computation power, cognitive abilities and

domain specific training to fully interact with the organizing system. However, the design of Chinese medicine cabinet supports interaction that are unique to TCM practitioners. Had balance not been at the core of TCM, putting different types of herbs into the same box would not make much sense, and in fact, cause more trouble and risk than necessary.

One of the constraints of Chinese medicine cabinet is its lack of standardization. As mentioned, four agents need to be present to achieve a balanced treatment. For a single treatment, numerous herbs can fulfill the roles of emperor, guide, minister and assistant. Therefore, there could be many different combinations to organize herbs, and thus result in a lack of standardization. However, one might argue that such flexibility is, in fact, an advantage that allows physicians and pharmacists to personalize their medicine cabinets.

Following an “on the way in” organizing strategy, an immense amount of effort and energy is required to arrange the resources. Yet, retrieving and dispensing such resources require relatively less time and energy. Such temporal tradeoff facilitates patients getting their medicines quickly and efficiently.

Conclusion

The design behind Chinese medicine cabinets supports many interactions that are crucial for TCM practitioners and pharmacists. Though TCM has been practiced for more than 2500 years and across most East Asian countries, the organizing principles of Chinese medicine cabinets are surprisingly similar and consistent over time and place. The philosophy of TCM that Chinese medicine cabinets embody make such organizing system a timeless one.

References

- Visualizing Chinese Medicine Cabinet. (n.d.). Retrieved May 5, 2018, from http://www.sohu.com/a/42336001_222911
- Inner Canon of the Yellow Emperor. (n.d.). Retrieved May 5, 2018, from <https://ctext.org/wiki.pl?if=gb&chapter=341612>
- Treatise on Cold Damage Disorders. (n.d.). Retrieved May 5, 2018, from <http://zhongyibaodian.com/shanghanlun/>