

Reuse, a Neglected “R” Word in “Reduce, Reuse, and Recycle”

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This editorial considers hindrances that keep me from making sure that my used wooden furniture items don't get thrown out at a point where their wooden content still has decades or hundreds of years of potential service left in them. I am a careless and lazy person, and I am not always appreciating the different ways in which other people might be ready to appreciate and utilize my cast-off items. Continued usage of a wooden item can be the ultimate in minimizing environmental impacts. I might envision that the only usage of an old, scuffed wooden dining room set is full restoration. But my niece might need it for her college apartment. A friend of a friend might need it for an informal basement art studio. Alternatively, if the set is really well beyond use in its original form, it could be converted into wood particles for particleboard or incinerated to generate renewable energy. Whether I use eBay, word of mouth, my church's electronic bulletin board, or just put the item out by the curb on a sunny day, a wooden item of furniture has the potential to continue to provide valuable service for much longer than I might first imagine.

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Wooden Items in a Throw-away Society

Recently I was asked to evaluate a research proposal in which the authors described an innovative and creative way to improve the properties of a used lignocellulosic material. The goal was to achieve a higher performance of an engineered wood product when using the modified recovered wood material. But I got to thinking: Wouldn't society be better served if those used lignocellulosic finished items were simply used again? After all, under favorable conditions, wood material can retain its strength and other attributes for many hundreds of years. So why are we looking for exotic ways to utilize particles or fibers of used wooden items? Maybe there is a simpler problem that we can work on, which in the end might be better for the environment and more likely to succeed.

Why do we throw things out, anyway? Consider, for example, a wooden table and chair set. I've sketched such an item in Fig. 1. Here are some likely reasons that I might decide to throw it out:

- My tastes have changed.
- I imagine that a guest to my house will regard it as not trendy.
- Part of it is broken.
- It's too small, too large, or the wrong shape for the room in my present house.
- It looks old.

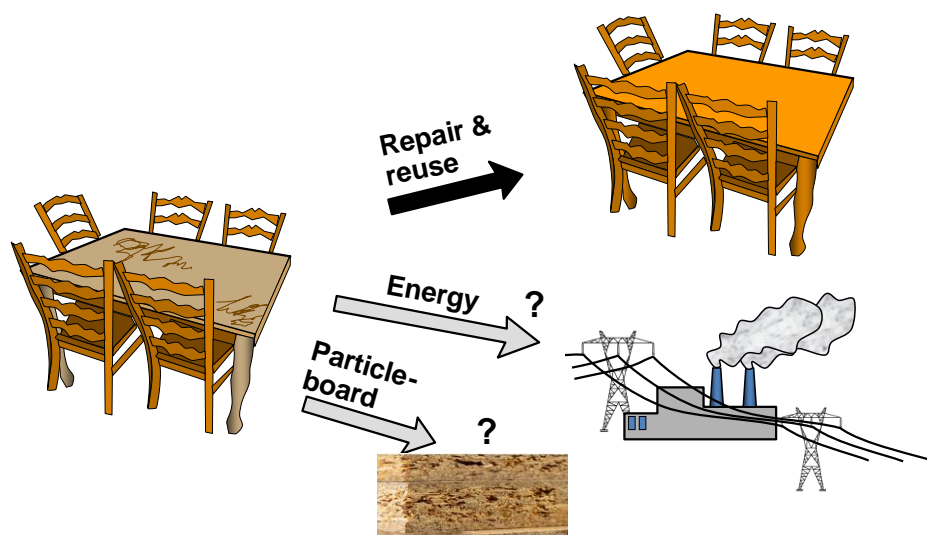


Fig. 1. Possible fates for my unwanted wooden dining room set

Alternatives do exist. For instance, I could sell the item in a yard sale or on eBay. I could try to find someone to repair it, refinish it, and reupholster it, if that is needed. I could put it out by the road and hope that someone takes it.

But I'm basically lazy. Even though there is a lot of value left in my old dining-room set, there are other things that I want to be doing, rather than worry about items that I no longer want. And besides, what about all those other people just like me (or worse), who are throwing out wood-based items at increasing rates, throughout our society? What keeps me from just throwing this set out as trash?

Looking for a Scalable Ideas

Running water. Trash collection. Transmission lines. Street cleaning, paving, and snow removal. Wastewater systems. These are examples of things that improve the quality of life for people living in the modern world. All of them require coordination. We can complain about the delivery and quality of all of these things, but doing away with them does not seem like a good option in an increasingly crowded world.

Personally, I like to complain about comingling of recyclable items. The paper gets all mixed up with non-paper items. It gets wet, and it starts to rot. In principle, there are robotic systems that can sort out the recyclable items, but in practice comingling will reduce the quality of recovered papermaking fibers.

As a resident in a well-run US city, within every two-week cycle, I place three types of bins at the curbside adjacent to my house. One of them contains mixed waste, destined for the landfill. Another contains recyclables, as already mentioned. Its contents include not only paper items, but also glass, plastics, and metals, including beverage containers, not all of which are completely empty. A third bin, which was introduced several months ago, contains compostable items, which mainly amounts to bits of tree branches, grass clippings, leaves, and the like.

For big items, such as appliances or furniture, my options are less convenient. Suppose, for instance, that my old washing machine no longer works. See Fig. 2. If I'm lucky, when I buy a replacement appliance, the contract includes not only delivery and

installation, but also the hauling away of the old item. Otherwise, if my automobile – or that belonging to a friend – is big enough, I can haul the item myself to a recycling center, wait in a line, and watch the item get heaved into a dumpster. Maybe the metal from that item will be recovered, I'm thinking, but I never know for sure. In the case of my used dining room set, another option would be for me to bring it to a thrift store, and I might even get a receipt saying that I made a gift of uncertain value.

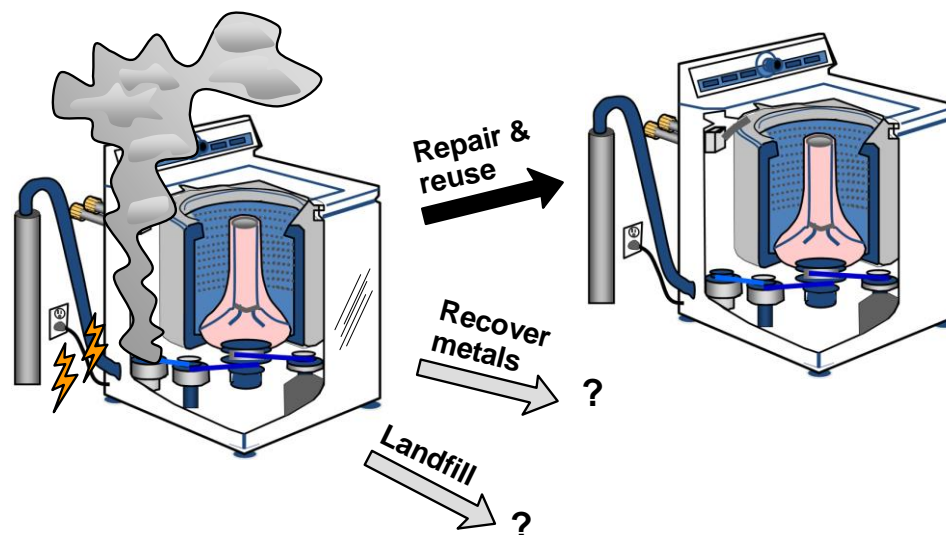


Fig. 2. Possible fates for my broken washing machine

A large potential loss of value would have occurred if my hypothetical wooden dining room set was dumped into a truck and comingled with other items. The wooden parts would likely have been broken. The upholstery, if any, would likely have become soggy. So a typical collection system for waste items, as they are available in my city, does not seem well suited for my hypothetical wooden item that still has potential value.

Thinking about that robotic sorting of mixed waste, I imagined some options for attempting to route my used wooden dining room set to its highest-value potential usage. I thought about using my smartphone. Maybe by taking a picture of my no-longer-wanted item, it could be automatically pre-sorted. A computer guru could develop an algorithm that would plan the best destination for my dining room set, and it even could plan the shipping route to minimize fuel and effort. I imagine my item automatically restored to its original reddish stained color, shiny varnish, and all of the wobbliness of the legs fixed. To get the process started, the item could be waiting in my carport, ready for pickup. However, there are lots of details that would need to be worked out. For instance, here are a few:

- Who will provide the service? The county? A private business?
- Who will pay? Will this add to my taxes?
- Will thieves use such a collection system as a way to gain entry to my house?
- Will such a service decrease the stock of used items available for the poor?
- And how long will I have to wait for someone to come pick up my item?

As I was writing the foregoing list of questions, I thought of the old saying “don’t reinvent the wheel”. Maybe my problem is that I am focusing on just my own idea of the

possible eco-friendly future for my dining room set. I also need to think in terms of the motivating reasons for people to restore wooden furniture. Those in the business of restoring furniture are likely to focus on two kinds of items – those of very high potential value, and work done on a consignment basis for work on family heirloom items. Those highly motivated restorers will have other ways to find items in need of restoration, including orders placed by clients at their websites. But not everyone needs to be a skilled artisan. Regluing, sanding, staining, and refinishing of ordinary wooden furniture can be a pleasant, low-stress hobby, and the results can be highly appreciated by friends and family members. When initiating such activities, it is critically important to use face-masks to avoid breathing dust and to avoid the use of any varnishes for which the would-be restorer does not have suitable ventilation. The environmental impact incurred by a simple repair and refinishing of a wooden item can be expected to be minor in comparison to just about every other option, since its continued usage postpones the need to manufacture a new item.

Others in my circle of friends and acquaintances may have more practical ideas regarding its future usage of my no-longer-wanted dining room set. Sure, some of those ideas might include disassembly, custom refabrication, custom reassembly, refinishing, and custom reupholstery. Continued usage of an item close to its original form seems to have a much better chance of maximizing the retained value, relative to the expended effort. But not everyone is thinking about a formal dining room. By fixing the leg of a chair or table, my no-longer-wanted item easily could have years of live in someone's starter home, a nephew's apartment at a college, or as a niece's workbench for hobbies. The dining room set might be incorporated into a furniture loan program serving mainly foreign graduate students in a university town. And maybe eBay, a yard sale, a free-market, or just putting the set out by the road with a "free" sign on it could be a good way to attract the attention of someone else. Maybe some stranger has an idea of how this particular wooden item still can have a specific ongoing value in something resembling its original form.