

SOME THOUGHTS ON THE DIFFERENCE BETWEEN HANDMADE AND FACTORY MADE GUITARS

by Ervin Somogyi. [Used with authorization]

I am often asked what makes hand made guitars different from factory made ones, and whether they're better, and if so, how. These are good questions, but complex ones. Handmade guitars are not manufactured goods in the same sense that factory made guitars are manufactured goods. Each is made differently, for different purposes and different markets, and with different intent, aim and skills. Factories need to make instruments which are good enough to sell to a mass market. Luthiers need to make instruments which are successful tools for musicians. Comparing a handmade guitar to a factory made one is analogous to comparing a painting with a toaster: the one really needs to be judged by different standards than the other. I wish to stress that I do not wish to malign either luthiers or factories, but rather to point out how very different their products are in spite of the fact that they can look almost exactly alike.



What, really, is handmade? Obviously, things were literally handmade a long time ago, when tools were simple. But what is one to think if the luthier uses routers, bandsaws, power sanders and joiners and the like? Aren't these the same power tools used in factories? How can something made with them be handmade? These same questions were asked by American luthiers in the 1960s and 1970s, because the use of power tools was so very common. After much debate it was decided that the answer had to do with the freedom of use of the tool. That is, guitars could be considered handmade if the tool could be used with a degree of freedom dictated by the needs of the work and the will of the operator. Dedicated and specialized tooling capable of only one operation, as is the rule in factories, did not qualify; neither did the rote assembly, even if by hand, of components premade to identical specifications. These became the standards by which to distinguish handmade from production made.

It might be most true to say that handmade guitars differ from factory made guitars primarily in that factory guitars are mass-produced, and handmade guitars are not. While this may sound obvious and self-evident, a number of implications arise out of this basic fact:

1) Long term repairability. In the long term, a guitar is likely to need tuneups, maintenance or repair work, just like a car. Things like bolt-on necks, and the fact that the repairman may have worked on this or that brand of factory guitar before and knows what to expect, can make certain operations easier. But otherwise factory instruments are often made with procedures and processes which, although quick, cheap and easy to do within the manufacturing context, can be difficult to undo or work with in the normal, post-factory setting. Guitar finishes are a good example of this. The traditional finishes such as lacquers and French polishes are beautiful, but are skill- and labor-intensive to apply. The increasingly popular polyurethane, catalyzed and ultraviolet-cured finishes are much easier and cheaper to apply, and look good. But, they cannot be repaired or worked with if there is damage. To fix a crack in the wood properly, the finish will need to be completely sanded off and redone. Lacquers and French polishes, on the other hand, are comparatively easy to spot-finish or touch up.

2) Personal relationships. If you deal with an individual guitar maker you will establish a personal relationship with someone which may last for years, and which may become an important one. He will almost certainly be available directly to you to consult with or to take care of some difficulty, and he will feel a responsibility to you for any work he has done. With a factory made guitar, you cannot have this personal relationship with the maker. You will have to settle for the best relationship you can have with either the store you purchased the instrument from or the factory's customer support hotline.

3) Choices, features and options. Factory guitars are made to strictly unvarying specifications and in large numbers. Each one will be exactly the same in all particulars, and if you want anything a bit bigger or smaller, or in any way different, you will not be able to have it unless you pay extra to have it customized. An individual instrument maker can provide you with an instrument that is tailor-made for you in many ways. As musical styles and playing techniques evolve, instruments with differing scale lengths, actions, neck widths and contours, fret sizes, string spacings, tunings, tonalities, electronics, woods, body shapes and sizes, etc. all become more desirable. But proliferation of design variables complicates production. I've been told that in Japan many Japanese customers want guitars exactly like someone else's, because that's how things are done in that culture. The factory model serves this need. In the United States, however, musicians more commonly complain about things such as that the neck on a certain brand of guitar is too awkward for their size hand, and that their hands would tire less if the neck were just a little different -- but all the necks are the same.

4) Value and price. A handmade guitar will carry a price which reflects its real value in terms of labor and overhead more truly than a factory made one which carries the same price. The former may take 200 hours of someone's conscientiously invested time and skill; the latter may take 8 to 36 hours of intensely repetitive and automated work. A factory will target a price at which it wishes to sell a certain product and will do everything it can to enable its introduction into the market at that level, including using parts made by others and mounting ad campaigns. A luthier will probably want to make something that's as open-endedly good as he can make it, without an overriding imperative from the profit motive. Because factory instruments are made for wholesaling and price markup, and handmade instruments are in general not, there is much more room for discounting within the system of retail store markups than an individual maker can offer. Discounting is a marketing tool, and factory made guitars are made and priced so that everybody in the complex chain of recordkeeping / tooling / subcontracting / assembling / advertising / retailing / delivering can share in the profit. Handmade guitars are priced so the maker can survive.

5) Quality. According to a guitar industry spokesman at a recent symposium, quality, from a factory point of view, is the same as replicability of components and efficiency of assembly. That is, the factory man considers quality to be the measure of how efficiently his parts can be identically made and how fast his instruments can be assembled in a consistent and trouble free manner. From the musician's point of view quality has nothing to do with any of this: it has to do with how playable the guitar is and how good it sounds. This also is, normally, the attitude of the individual luthier, for whom efficiency is important but secondary to his concern for creating a personal and effective tool for the musician. The main ideal behind factory guitars is that they be made quickly, strong and salable. The main ideal behind the handmade instrument is quality of sound and playability. A really well made guitar almost plays itself.

If quality for the factory man has to do with efficiency and consistency in making identical things, it cannot be so for hand makers. And for obvious reasons: there are a lot of hand

makers working at vastly different levels of skill and creative talent, and they have different concepts of "best". Let us return to the analogy of the painting and the toaster to illustrate this point. A painting is something somebody made which may be good or bad, or beautiful, or repellent, or even personally meaningful. Or perhaps unintelligible. Then, some paintings can be amateurish or indifferent. Some are interesting. Some may be pretty damn good. And some are timeless, significant and really great. A toaster, on the other hand, will do what it was designed and built to do, every time, or one fixes it or discards it. One does not normally think of a toaster as being amateurish, meaningful, expressive, trite, evocative, profound, unintelligible, interesting, or timelessly great. This is not what toasters are all about.

6) Craftsmanship. An intelligently run factory is geared to operating smoothly in a standardized, not customized way. Its priorities are automation of procedures and dimensional standardization of parts. A hand maker, on the other hand, is generally flexible and inefficient enough to do customized work in every place where it counts. This methodology is essential due to the innate variability of woods: two identically thickened guitar tops can differ by as much as 100% in density, 200% in longitudinal stiffness and 300% in lateral stiffness. Bracewood also varies as much and further compounds the possibilities of mindful wood choice and use. Therefore, while certain components in handmade guitars may be roughed out to approximate dimensions in batches of 4 or 6 or more, the selection of these components, and their final dimensions in the assembled instrument, are done on an individual basis: this top gets those brace-blanks, which are then pared down to that height, which depends on the stiffness of the braced top, its tap tone, and the judgment of the luthier as applied to this particular unique instrument.

As mentioned above, the levels of skill, judgment and attitude among luthiers are variable quantities, some highly developed and some not, depending on how experienced and talented one is. In my opinion many hand makers today are insufficiently trained and experienced, and as a result many handmade guitars are less satisfactory than factory guitars of comparable price. Any luthier worth his salt, however, will continually strive to learn better techniques and improve his work, because personally achieved quality needs to be his stock in trade. He must be good in order to survive. The intent and skill level of factory work, on the other hand, tends to be constant and predictable and does not improve appreciably from one year to the next. Factory work is based more in using the best tooling and jigs available than in developing workers' skills beyond what they must have so they can operate the tooling efficiently and safely and do work that meets the standards set by the quality control department.

This is, in fact, the essential distinction between handmade and factory craftsmanship. The factory's craftsmanship is based in division and automation of labor: there is someone who is paid to do each step or make each part. He has to do it repeatedly, many times a day, at a level that meets the factory's criteria for acceptability. As often as possible, this specialist is replaced by a machine. The handmaker, in comparison, has to be adept at everything. He must spend years to master all the techniques and skills necessary to produce a high quality guitar, and, until he does so, his guitars will be of less than highest quality in some way. The need to perform every operation to a high standard is not unlike an Olympic athletic performance: make one single mistake and you fall short of the goal. To aim so high is an exceedingly demanding, and noble, effort.

7) Playability and action. Since factory instruments are assembled in large quantities, they normally almost all need fine tuning and adjustment before they come into the hands of players. Music stores in the United States often have a person whose job it is to set up all new guitars so that they are most comfortable for the customer. I don't know whether it is the same in other countries, but I'd be surprised if it weren't. Set-ups include setting the strings

over the frets at a comfortable height, dealing with buzzes, calibrating intonations at the bridge, adjusting truss rods to the stringing, and whatever else needs to be done. Hand makers, on the other hand, will usually have done these things prior to delivery because, as far as they are concerned, a guitar that isn't as perfect as possible is not ready to be delivered.

8) Sound. The study of the factors involved in the production of tone teaches the instrument maker that small variations in structure in the right places can make important, specific, differences in response. Because there are so many places where one can take away or add a little wood, and because the difference between "a little more" or "a little less" can be critical to a specific aspect of tone, this study takes years. This is the level of work a hand maker engages in and strives to master. Ultimately, he will be able to make guitars which are consistent in quality and consistently satisfying to his clients. The factory approach, on the other hand, cannot spend so much time on any one guitar: its entire operation is based on treating all guitar assembly processes identically. Therefore all tops of a given model are equal thickness, all braces are equally high, all bodies are equally deep, and so on. Tone in a guitar is controlled by paying attention to specific qualities in the materials. Yet, the factory's focus on treating all parts uniformly bypasses these important factors. Because dimensionally identical guitar tops and braces can be twice the mass and up to three times the stiffness of their companions in the assembly line factory guitars are, essentially and literally, random collections of these physical variables. In consequence, their sound quality will correspond to a statistical bell-curve distribution where a few will be brilliantly successful, a few will be markedly unresponsive, and most will be pretty good. To repeat: a factory work's chief priorities and focus are production, selling and delivery. It is off the mark to compare this to a concern with making a personal best at something.

9) Durability. Here, again, the concerns a factory and a hand maker bring to their work are markedly different. And for perfectly good reasons. There is nothing wrong with a factory maker's desire to sell guitars to the public. But each member of this anonymous guitar playing public will treat the guitar with different degrees of care, use different strings, play differently, live in different cities or even countries with different climates, temperatures, altitudes and humidities, and will sometimes take their guitars to the beach or on trips into the mountains. These guitars must be able to hold up against these unpredictable conditions. It is the factory's concern that these instruments not come back to plague its warranty department with problems and repairwork. To ensure this, their guitars are substantially overbuilt. Hand makers are concerned with making sensitive, responsive tools for musicians who are fairly certain to treat these with some care. These guitars can therefore deliberately be made more delicate and fragile -- and this makes possible a louder, more responsive instrument. The factory cannot afford to make fragile, maximally responsive instruments: for every increment of fragility a certain predictable number of damages and structural failures can be predicted, and the maker would sink under the weight of warranty work. The hand maker, on the other hand, cannot afford to overbuild his guitars: they would be the same as the factory version but at a higher price, and they would fail to have that extra dimension of responsiveness which makes them attractive to the buyer. He would soon starve.

10) Machine precision vs. the human touch. Machines will do the same operation, over and over again, to the identical level of precision; there are no bad days or sick days, and they don't get fatigued or depressed. Hand work, on the other hand, is forever shaped by fluctuating human factors of energy, attention, concentration and skill. For these reasons, most people believe that machines can produce faster, cleaner, more consistent and more desirable products for the consumer, as well as reducing the tedium inherent in parts production. There is much truth in this.

But also, it is a fallacy. This relationship between tooling and craftsmanship only applies in direct proportion to how the machines and operations are completely free of human intervention -- as is the case with computer controlled cutters, which are getting a lot of press nowadays. But as soon as any real workers enter the picture factories cannot escape from the same limitations of hand work under which hand makers suffer. This is shown by the fact that a factory's own quality control people can tell the difference between the level of workmanship of one shift and that of another, and especially when there are new employees. Anyone who has done factory work of any kind knows that personnel problems are the larger part of production problems. Naturally, no one advertises this.

This brings us to the fundamental difference in the logic which informs these different methods of guitarmaking. The factory way to eliminate human error and fluctuation is to eliminate, or at least limit as much as possible, the human. The handmaker's way to eliminate human error is to increase skill and mindfulness.

11) Is a handmade guitar necessarily better than a factory made one? No. Many factory guitars are quite good, and many handmade guitars show room for improvement. How successful a handmade guitar is, is largely a function of how experienced the maker is and what specific qualities of design or tone he is known for. No one ought to be surprised to realize that beginners will make beginner's level guitars, and that more experienced makers will make better ones: this is what makes the instruments made by an experienced and mature maker so special. On the other hand, there is considerably less significance to the purchase of an instrument made by a factory simply because it's been in operation for many years. Long, cumulative experience with the materials is not what they are about, and neither are improvements and advances in design which conflict with profitability.

12) Are factory guitars any better than hand made ones? By the standards of the factory people, yes. They believe that high-volume assembly of premade and subcontracted parts produces superior products. At least one company advertises this explicitly. By the standards of the individual maker, it is possible for factory guitars to be better than individually handmade ones, for all the reasons outlined above. But, in general, factory guitars are "better" only in a limited sense of the word, also for all the reasons outlined above. I wish to emphasize again that handmade and factory guitars are each made with a different intelligence, with different priorities and for different markets. The luthier cannot compete with the factory on the level of price. The factory cannot compete with the luthier on the level of attention to detail, care and exercise of judgment in the work.

13) Are not high-end factory guitars, at least, better? From the view of the musician, no. They are much more extravagantly ornamented and appointed and also produced in limited editions so as to justify the higher price. And they are in general aimed at a quite different market -- the collector. For the average musician, the appeal of collector's guitars is blunted by the high price; and for the serious musician by the fact that their essence, soul and sound are produced under the same factory conditions and with the same concerns as any other product of that factory -- with comparable results: random variation of musical quality. But the collector has different interests. He seeks the appeal of rarity, uniqueness and "collectableness" in an instrument and his principal interests tend to be acquisition, owning and display -- not playing or using.

The collector's market of vintage and collectable musical instruments is not large but it is quite strong, and its continual hunger for new products helps drive the production of "collectable" guitars. Factories respond to the demand by producing and advertising limited edition guitars which have, for the buyer, the requisite appeal of uniqueness, scarcity, rarity,

and high cost. There are individual luthiers whose work is sought in the collector's market. But on the whole the difference between factory's and a handmaker's collectable work is that the individual guitarmaker's collectable work is scarce by definition and ends when he dies. A factory such as the Martin Company can turn out limited and special edition collector's models for generations.

14) A collaborative aspect. I like to think that an important difference between handmade and non-handmade guitars is the degree to which the process is one of collaboration. Makers want to find musicians who are able to appreciate how good their work is, and who can challenge them to do even better work. This is a fruitful partnership. The factory's needs are overwhelmingly to sell guitars, and usually prefer to form partnerships only with endorsers.

15) How can one really know whether one guitar is better or worse than another? A key factor in the assessing of what is better and what is worse is the somewhat basic one of how educated and sensitive one is to the matters under examination. A discussion of differences cannot go very far without understanding this. The consumer is not merely a passive bystander in this debate but a participant in it, even if he doesn't know he's doing it. To illustrate, I want to give you an example of something that has happened to me repeatedly in my experience as a guitar repairman (and which I'm sure other repairmen have experienced as well).

A guitar player called me to report that his guitar, which had worked well for several years, was now not playing in tune. He suspected that the tuning mechanisms were worn and slipping, and he wanted to know whether I could replace these. I said yes, please bring your guitar to my shop. When the caller arrived I examined the guitar and found no problems: the tuners worked perfectly, the bridge hadn't become unglued, the frets and nut hadn't moved, the neck hadn't warped; the guitar was not in any way damaged or broken; in fact, everything was exactly as it should be. What had really happened was that the musician's ear had improved over time so that he could now hear that the guitar did not play in tune. In fact it never had; but he simply had been unable to hear the dissonances before.

Obviously, a guitar which plays in tune is better than one that doesn't; but if one is unable to hear this then it becomes a non-issue. With an improved ear, this man was ready for an improved guitar. This same growth of ability to see and hear in an educated and experienced way affects our ability to appreciate nuances of detail, subtlety, and quality. These are the very areas in which handmade guitars can differ from, and excel, non-handmade ones. But, until a player reaches the point of capacity to discriminate, whatever guitar he has is good enough.