



Institute for Advanced Physics

Is there in Truth, Beauty?

by Anthony Rizzi

It is no secret that our culture has ceased to be beautiful. It is a secret that many of us have lost any sense that beauty is *real*. It's a kind of secret we keep from one another by sometimes acting as if beauty is real and never clearly saying we think it isn't. This lack of clarity, in turn, arises because we never discuss it from its first principle source. This article came out of a conversation with a friend who thought physical beauty was just an emotional reaction in the beholder. In other words, he thought beauty was in the eye of the beholder. No it's even much less than that; he thought it was in solely the feelings of the beholder. In speaking of feminine beauty, he further thought that the differences in height, weight, strength, skin texture, etc., between men and women were statistical, and did not have any basis in the nature of men and women. He said we mistakenly think they do have such a basis because of the statistics. My friend's comments bring to light what we all confusedly think at some habitual level. Let's address this very deep problem in our thinking.

After all, if there is no physical beauty, immense consequences follow. In fact, if there is no *physical* beauty, we can know no other kind of beauty. Why? Because every thing we know comes through what we know through the senses and thus whatever we say about immaterial things, including their existence, must be said by analogy to the physical things we know first.^{1 2}

¹ See my *The Science Before Science: A Guide to Thinking in the 21st Century* (SBS).

Furthermore, if we lose beauty, reality itself is lost because beauty is one of the "transcendentals," i.e., it is reality itself looked at from a certain angle. Reality or "being" is a symphony of beauty.³ Beauty is the goodness of truth.⁴ Beauty is in things, not simply a random feature of the individual beholder. Indeed, we will see the latter is unintelligible.

Beauty is divided into two categories. Because we are physical creatures, and thus limited, some things are beautiful to us (1) immediately and (2) others only in an indirect way. Those that are immediately beautiful to us are those that are proportioned and clear to our cognitive make up, which is to know through the senses. Thus, the first meaning of beauty for us is truth that is immediately attractive to us because it is commensurate with our sense powers. We see the beauty of, for example, the bright delicate look of a red rose, with its sweet smell.⁵ The second type of beauty looks more deeply into the essence of the thing to learn

² See my *Kid's Introduction to Physics (and Beyond)*.

³ More precisely, unity, goodness and truth are the primary transcendentals. Beauty is a derivative category of these. Like the primary ones, beauty is said of various things in many analogous ways.

⁴ At the highest level, goodness is beauty and is only distinct logically, i.e. only distinct in our minds not in reality.

⁵ Because sight is the most information intensive of our senses, it is easy to fall into judging immediate beauty by sight alone. If we once realize that a rose doesn't have its proper smell, it loses some of its beauty. If we realize that this is because it has a genetic defect arising from breeding or direct genetic tampering to last longer (as it apparently is in many roses in the U.S.), then the fuller (second) sense of beauty starts to register some ugliness.

how well perfected the individual nature is in its essence, especially how well oriented it is towards that perfection. In this full sense, a rose is, of course, still beautiful but a newborn child is infinitely more beautiful even if he has some exterior deformity, say a cleft palate, because his nature is infinitely higher⁶ than that of a plant.

In terms of our own nature, beauty, in this fuller way, means how close we are to what we are meant to be, inside and out. Some things we can control; others we cannot. What we love the most, i.e. that which we have chosen as our ultimate goal, and the firmness with which we have chosen it best reveals our particular nature; this is in turn revealed by our thoughts, words and actions. This fuller type of beauty is said to be indirect, contrasted to the immediate type, because it takes thought, effort, and time (often a lot of all these) to fully see, appreciate and feel it. Again, when complete, it includes the immediate type of beauty.

Why Beauty Cannot Be Solely an Emotional Reaction

There is more to say, but let's return to my friend first, for he will reveal to us the urgent need to explain the rest. And, he will help us move our generally confused and even incorrect understanding of beauty to a proper understanding. Recall my friend thought that beauty was simply his own emotional reaction to a particular thing; call it X. What is wrong with this explanation?

⁶ Man's rational nature, his ability to think and will, reveal a radical break with the purely material nature of a plant — see *The Science Before Science: A Guide to Thinking in the 21st Century* by Anthony Rizzi.

Among the first principles that we learn is that “nothing changes itself”⁷. How can we get the feeling of attraction associated with beauty unless something gives it, i.e. causes it? It cannot come from nowhere. The only question then is: what is the cause? You might answer it was trained into him. Well, think about this kind of training. This kind of training⁸ implies that there were things, call these things Y's, that he was repulsed by (or things he was more attracted to-- i.e. appeared more beautiful to him) that were used to make him associate this feeling with X. In other words, in seeing X, he is recalling the Y's and responding to them. That is, we have admitted in this answer that there is such a thing as ugliness, things that repulse us not attract us. Repulsion is clearly a negation of a positive. That is we are saying there is something not good, something not commensurate with the truth. To understand “not good” one clearly must already understand “good,” otherwise “not good,” the negation of good, has no meaning.

Thinking Straight from the Beginning to End

Of course, we already really know all this; otherwise we could not have had any of this discussion. We know the good and the true first in the physical world and then we see that there are places where the good and the true are

⁷ See my *Kid's Introduction to Physics (and Beyond)* which for the first time at this level gives these principles and shows where they lead. Note that this kid's book is for everyone, including adults. It is called a kid's book because the principles are those that should be learned as a child and because it is presented at a very simple level. Since none of us were taught the principles in the book, we can say it is for the kid in each of us.

⁸ We are not here thinking of direct physical pain, but a more subtle type of training of the mind and environment that deeply forms the emotional reactions.

distorted or, if not distorted, not commensurate with our own senses (like, for example, if one were to try to stare at the noon sun to attempt to see its beauty directly). Our previous discussion was just a way to help walk us back into this realization. It is much better to go straight forward. That is, we should start with what we see and then build the whole of our understanding, rather than see it and tangle it all up and then try to untangle it.⁹ That is, we sense physical things and are attracted to them; some things we see or figure out quite quickly are beautiful, others it takes some time. Either way, we see that certain things are attractive to our senses and our sense-based understanding. Flowers are pretty. Women are pretty. Why? We will build the answer to this as we go.

Even though we should not tangle things, we have.¹⁰ So, let's do one more untangling exercise before we argue from what we directly see. Back to my friend. Remember, in trying to maintain that feminine beauty is purely subjective, my friend also asserted that certain obvious differences between men and women, like height, weight and strength, are purely statistical. We, he thinks, deduce them from statistics and then improperly assign them

⁹ See my *A Kid's Introduction to Physics (and Beyond)* and *The Science Before Science (SBS)* for straight forward development, also see my essay "The Science before Science – Reintegration of the Modern Mind and its Science" by Anthony Rizzi in *Reading the Cosmos: Nature, Science, and Wisdom*, edited by G. Butera (p 60-79, 2011, Washington D.C.: American Maritain Association) on the need for SBS.

¹⁰ More accurately, our thinking has become tangled because of our incomplete physics. In particular, our physics is equational. It is not *explicitly* oriented towards understanding nature itself but in capturing the most generic aspects of nature in a symbolic structure—most powerfully by reflecting physical reality into its first property of quantity (see my *A Kid's Introduction to Physics (and Beyond)* and *The Science Before Science*).

to men and women solely because of those statistics. He further said we know them only via statistics. What is wrong with this? It has multifold problems.

Why One Cannot Start with Statistics

First, statistics in its fullest sense is an equation dominated science (n.b., my friend is a physicist and knows this field). More exactly, it is an empiriological science, making heavy use of what I call quantiological math.¹¹ As such, it relates symbols to measurements and thus flies over the nature of the things involved, but assumes them. The methodology of equational (empiriological) science is built using principles and images that comes from what we touch, see, hear, smell, and taste. It is thus not the proper starting point for generic questions about anything. We must start with what we sense and the principles given to us in the things we sense. A tool, such as statistics require we understand the generic before it can give us further specification of that generic.

Because of this, we cannot expect statistics to give us the requisite generic understanding of the nature of a woman needed to understand the nature of feminine beauty.

Second, even if one takes statistics to mean the general feel, rather than the fully (empiriometric) scientific analysis, that, for example, most men we meet are significantly taller than most women, one still has to account for these differences. That is, they must arise from some cause. They cannot simply be asserted. To do so is to stop trying to understand, which is to go against our very nature. Our nature is to know. We are made to know. This is what science is about, learning

¹¹ See footnote 9.

about the world. Not simply listing all the things we see. A computer can do this. Indeed, it can do this ridiculously better than us. Where did those differences come from? They either come from within the nature of man, within the nature of men and women, or they come from the environment.¹² That is, they come from the substances themselves or from outside. Those are the only two options.¹³ If they come from outside, they would have no stability as the environment changes. They should, like a tan, be there sometimes and other times not, depending on certain circumstances.¹⁴ Now, clearly, this is not the case, so they must come from within. So we know generally (which means of necessity a little vaguely) that these differences arise from the differences in the specific nature of man and woman. Both are rational animals. However, human nature is not complete without man and woman; his particular type of rational nature essentially requires the complementary nature of man and woman. In short, man is two.

Beyond this, note that even if the differences were due to the environment, they would still have a root in the nature of a man and a woman. Even such merely accidental properties (called mere accidents, as opposed to proper accidents)¹⁵ imply that we have *within our nature*, i.e. a certain proper accident, the ability to have a given mere accident, for

example, a certain temperature or height. A full grown man, for example, cannot be, for example, 3mm tall or weigh only 2 ounces. Thus, even if these were merely accidental differences they would reveal *something* about human nature.¹⁶

As we have pointed out, it is clear these differences reveal something about the essential nature of man as he is two, male and female. Height, weight and strength are clearly not the most important differences, but instead arise out of those deeper differences.

Addressing Beauty Directly

Now, let's return to our question of beauty more generally, starting not from our confusion but from what we know. We know that we are animals that know things; we know we are rational animals.¹⁷ The purpose of our lives is to grow in knowledge of all types and all

¹⁶ There is actually one other way that a feature of a thing can arise extrinsically. It could arise by environmental factors that *damage* an organism. This is different from an accident which, even if it is a *mere* accident, has its root in the organism. For example, take the case of a horse. A gamma ray may damage a sperm, leading, for example, to a horse with a deformed right front leg. The animal, thus, is actually deprived of something that arises from its nature. In this case, its deformed leg means it cannot explore, learn and get food very well. It cannot defend itself or properly socialize with other animals. In the wild it would, sadly, eventually die. This is, of course, nothing like, for instance, the case of the size difference between, for example, male and female lions. The male lions need to be larger to successfully defend their pride (its females and cubs). For those wanting an evolutionary explanation, note that evolutionary theory reveals how the environment shapes pre-existing organisms so that they can change to other ones. However, it does not obviate the need for each organism to be something (i.e. to be a substance with a certain nature); in fact, it implicitly assumes this after the fashion of empiriological theories (*see The Science Before Science*).

¹⁷ *See The Science Before Science* for how we know this.

¹² In the extreme case, this can include things outside the universe; in particular, the direct action of God.

¹³ To say this precisely, we need accurate language. In that language, invented by Aristotle, we say that these differences arise either from proper accidents or mere accidents. Proper accidents emanate from the thing and thus properly belong to the thing.

¹⁴ Note, these accidents can arise from our generic nature as men or from our specific nature as this or that man, but we are not discussing this distinction right now.

¹⁵ See footnote 7.

that knowledge begins in what we see, hear, touch, taste and feel. Things that are commensurate with these reveal that they are pathways to knowledge. We are immediately attracted to things that are commensurate with our senses and present an integrity, i.e. a wholeness, in a straightforward and clear way to our understanding. Of course, things are not really so simple for at least two reasons. First, it is totally possible for a thing to have an exterior beauty and be missing something internal that even more deeply belongs to its nature. A man may marry an exteriorly beautiful woman only to find out later that she is actually interiorly ugly. She may be empty in thought and action. Second, some things are damaged, i.e. missing things that properly belong to them at this exterior level, but not so interiorly. Thus, if we judged the quality of thing's *particular* nature by these surface things alone we could be radically misled. A man who marries a woman with a scarred body may be yet marrying a very beautiful woman in the deeper sense, for she may be very smart and good.

Indeed, the well formed person does not stop his analysis at the beginning, with only the first things he learns. Remember the first things we learn are very simple. Man, for example, has no sense of person! He has to figure out what a person is from a radically simpler contact with reality. He can make direct contact with only very simple properties, such as color and sound and hot and cold and sweet and sour. Through these he learns about everything else.

A well formed man, a man that has formed proper habits of thought and action, will see, and feel, the beauty of a woman as more than just the immediate form of beauty. He will not deny the reality of the immediate exterior physical beauty, but will realize that there is

more to the woman than this. He will in fact see that a woman that has exterior physical beauty but an ugly interior actually mars her external beauty. It introduces an element of ugliness. Sometimes the external behavior that results from the interior ugliness is so grotesque and disproportionate to the senses that the external beauty may take a while to see. Other times, it can take quite a while to see the damage that the interior has done to the exterior.

Are Snakes more Beautiful than Flowers?

This distinction between the interior and the exterior leads us back to the two types of beauty mentioned earlier. What is immediately attractive to our senses is not necessarily the deepest thing about the object of our attraction.

Now, the second type of beauty, i.e. the one that penetrates to the nature of the thing, is more general and, thus, contains the first. But, sometimes the second does not have the first. To better understand this, let's look at some examples.

Flowers are pretty; frogs are not. Why? A frog's skin is wrinkly, secretes often toxic mucus, and generally not pleasing to the sight and touch. It has these properties because a frog is a (cold-blooded) amphibian, whose nature thus puts it on the edges of water. The external shape, color, size, texture, etc. match well what they need for their environment. Now, their environment is very different from ours, thus their external appearance is not connatural to us, does not mesh or resonate well with ours. Our senses and our understanding tell us pretty quickly this is something that may have danger for us because it is from an alien environment. This does not mean that it is immediately dangerous but

potentially so. For example, it is known that frogs can carry Salmonella bacteria. This makes them a little ugly to us in the first meaning of ugly. All this is even clearer for something like a snake.

In short, in the first meaning, things are beautiful if they are consonant with our nature, revealing something that fits well with our sense powers and abilities, including our natural need for food and need to avoid harmful things.

By contrast, a rose is immediately attractive to us. Why so? Its sweet smell is reminiscent of the base of our whole metabolism, sugar. Its delicacy, patterns and proportioned color mesh well with our own size and are proportioned to the ability of our senses to process. For example, if there were too many folds (say nine million), it would surpass our ability to process and make direct sense of. Flowers also generally indicate the presence, as we discover, of a fruit; in this case, it is rose hip, a fruit that one can eat. Again, here we need to be careful because level one (immediate) beauty can be deceptive. In this case, the beauty might be meant for another animal, not man. For example, birds can eat uncooked elderberry berries, but we cannot. The beauty is indeed there, but this immediate kind of beauty is not the whole story. This goes back to the fact that our (healthy) external senses are limited but do not err.¹⁸

Now, once we observe and analyze to the point that we understand fully what a flower is and what a frog is, we see that a frog is more beautiful, absolutely speaking, than a flower. This second meaning of beauty reveals powerfully what we just said, viz. our senses are limited. This is a deep limitation of our nature. In short, our senses only reveal to us the

simplest aspects of things: color, hotness, hardness, parts, etc. Yet, it is through them that we learn and understand *everything* we do know. It should then be no surprise that the full depth of things is not revealed without reason and observation. If everything were as simple as that presented directly to our senses, we would not ourselves exist! Something (like ourselves) that knows color is obviously distinct and much above color!

Indeed, a frog has the capacity to know color and to sense the flower. The flower does not. Clearly the frog is, in this deeper way, more beautiful than the flower.

We have not, of course, exhausted all the possible *particular* questions one can ask about immediate beauty versus essential beauty, but we have given the general principled answer from which all the uncountable number of questions proceed.

The Beauty of Women

However, given its preeminence and given the particular discussion that spawned this article, we will discuss the most important particular case, the beauty of women and the correlative attractiveness of men to them. To understand it, we need to pick up a few important facts about our nature.

As I have discussed elsewhere,¹⁹ because of our physical nature, (1) we learn through the senses and (2) each individual member of the human race is only a partial realization of the full nature of man. Now, because we are rational animals made to know

¹⁹ See *How a Neglect of Physics Has Turned Christianity into a Myth for Modern Man* by Dr. Anthony Rizzi published in *New Oxford Review* as two part article: April 2013 “*Neglect of Physics is Strangling Christianity*” and May 2013 “*Is Physics Necessary for Salvation?*”

¹⁸ See my *The Science Before Science*, Chapter 3.

and because all we know comes through what we know through the senses, we are, as mentioned, dependent on simple low-level contact with reality to reach our goal, which is Truth. Thus, each individual man, because of his necessary having different strengths of sense capacity and understanding gives varied access to the simple sense domain and through that to all else. In short, because our final end is Truth, we need other men, for only through the community of man, in space and time, can we reach the depth and breadth of truth for which we are meant.

How does this community arise? Through a complementarity whose very nature is to bring about other men through its oneness. In plain language, it is the love of the man and woman that brings forth the rest of the community. Indeed, it is thus the foundation stone of community, both in time and in principle. For all further understanding of community arises from understanding this procreative community. This is why we spontaneously talk about the *brotherhood* of man as the most profound type of unity. Now, in order for there to be a deep causal relationship (category 3 in the list of 9)²⁰ between the two separate substances, one needs an action and reception relationship. At the lowest level (in non-sentient organisms), this means one organism gives the seed, the other receives it. This extends up as one proceeds to higher animals up to man, but this is a deep area that would expand this article way outside its title. So, we leave it simply that man and woman must be deeply complementary so as to produce the necessary initial communal relationship from which offspring will take their root. That is, in this union, a third will be produced which is

profoundly enough different that he is, himself, if he and his family lives to their potential, an indispensable part of that family's growth in knowledge and (after and through that relationship) an indispensable part of mankind's growth in knowledge. Because this new man, the child, must be significantly different from either his mother or father, the complementarity between the man and the woman must indeed be deep. In this way, one can activate the potential in the other in procreating and educating the new man. This view to the complementarity is, in fact, part and parcel of the fact that the *unity of the man and woman that the child represents by making that unity complete is the source from which the community of men comes*.

So, why do men find women beautiful? Generally, men and woman are attracted to each other because of their complementary nature which reveals they have things to learn from each other.²¹ But the attraction is asymmetric because of the complimentary nature of mankind, i.e. mankind is composed of two "halves:" man and woman.²² As the old phrase goes, women are beautiful, while men are strong. Women have a kind of type one (immediate) beauty that men do not. This does not mean men are ugly; their beauty to women is of a less immediate type, relating much more to strength and leadership ability than to direct

²¹ This is, in turn, ordered towards procreation of men to build the community of men, so that the diversity of men can grow us all in knowledge that, otherwise, we would never have.

²² Each is, of course, a full substance, i.e. fully a person (more precisely a rational animal) called to grow and mature in truth. We are here talking about the relationship *between* rational animals established within that nature; it is a relationship that is an essential part of man's nature and thus to that maturing process and life long growth in knowledge and virtue.

²⁰ See *A Kid's Introduction to Physics (and Beyond)*

pleasantness of visual appearance. This is a part of the previously mentioned complementarity. Part of the action of the woman is her natural beauty which acts by attracting the action of the man.

To emphasize the *need* for complementarity, note that complementarity is needed for any kind of relationship. This is seen even in inanimate creations; what good, for example, is a bolt without a nut?

Finally, the immediate type of beauty (type one) must be considered in light of the absolute type of beauty (type two), that is, of the essential goodness of the truth of the thing under consideration. Man and woman are both good and beautiful because they are rational animals with the goal to know, finally Truth Himself.

Dispelling Some Last Worries

Now, my friend was worried about the idea of womanly beauty being real because of a couple apparent consequences. He thought it might be just one person's standard saying that beauty really resides in a woman; thus one would be generalizing a mere personal preference. We have seen that beauty does indeed reside in the woman. But, one can respond in a powerful, though not fully articulated form, by referencing the intellect of classical civilization: namely, the Greeks. The catalyst of the *Iliad*, the beauty of Helen of Troy, reverberates throughout time. It is not my invention or yours but a reflection of nature. Such a core theme resonates through history because of its deep root in human nature. This is not, as it stands, a proof of the reality of beauty, but once one sees that reality, and only then, can one understand this resonance.

More importantly, my friend thought acknowledging the reality of feminine beauty

would imply a highly *particular* standard of physical beauty must apply to all women. For example, he thought blond might have to be declared beautiful and brunette not. The mistake here is to not realize that beauty, in this context, is generic not specific. Something can be beautiful without comparing it to another, just as any given properly formed triangle is just as triangular as any other.

Physical Beauty, Our Starting Point

We, lastly, return to emphasize why physical beauty is so important. Why is the loss of it so devastating? The reason has already been mentioned, but now we bring the point home. The answer is our idea of beauty, like all our ideas, is built on what we get through the senses. If we first had not been attracted by physical beauty, we would not know what beauty was *at all*, including non-physical beauty. To see this latter point, consider the following.

Suppose, *per impossible*, I had not recognized any beauty in the *physical* world, any attractiveness of any element of the physical world, but yet I knew what physical things were.²³ Now, man knows physical things first, then his own nature. In particular, I discover my nature by reflecting on the fact that I know the physical world.²⁴ When I reflected on the fact that I knew the physical world and came to realize that I was a knower, a rational animal, I could *not* then see the beauty of such a rational nature (which has the nonphysical element of the capacity for knowledge). Why? I could not see the beauty of my rational nature, because my understanding of that nature is wholly composed of my understanding of the

²³ This is impossible because we do see that the nature of reality is to be attractive to a rational nature.

²⁴ See footnote 1

physical things I know, which are not beautiful to me.

Beauty in Summary

Beauty is real, but, like anything, we can become confused about its reality, even to the point of implicitly denying it. Indeed, because we have not been taught and thus do not know the first physics upon which all we know must stand, we should have expected that we were confused about it. Only by grounding our understanding clearly in these first principles can we make the distinctions that permit us to see that beauty is real.

Simply said, *beauty is the goodness of the truth*. The more good something is, the more attractive it is. Thus, we might rephrase this definition by saying beauty is the clarity of the truth. For the more clear the truth of a thing is, the more attractive it is to us. Of course, the more deep and whole the truth revealed, the more attractive it is. If a thing presents its deepest proper nature clearly, then it will be attractive. Because we have two distinct powers (sense and intellect) and because we have a limited nature, what immediately appears beautiful to us may not be the deepest beauty the thing has. It may be proportioned to us and our powers better than another, and thus its truth resonates more clearly with us. Thus, only thought and the hard work of habit forming (i.e. learning in all four steps—see *How to Learn in Four Steps*) can make us be appropriately attracted to every true beauty. This is because only in this way do we learn to see clearly the truth that each thing has.

This has profound practical consequences. What would one's life be without beauty? Einstein profoundly said, "The ideals which have always shone before me and filled me with the joy of living are goodness,

beauty, and truth. To make a goal of comfort or [mere emotional] happiness has never appealed to me; a system of ethics built on this basis would be sufficient only for a herd of cattle."

In the sphere of art and media, this teaches us that the truth of a message will be compromised by not presenting it beautifully. Indeed, to the extent that it is not beautiful is the extent to which it is not clearly true. Better said, we need to make our art clearly true in order to make it beautiful.

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He is author of The Science Before Science: A Guide to Thinking in the 21st Century and A Kid's Introduction to Physics (and Beyond); he has been interviewed in many media outlets. In addition to his professional articles, Dr. Rizzi recently authored the ground breaking texts Physics for Realists-Mechanics and Physics for Realists-Electricity and Magnetism (both recommended by the journal of the American Association of Physics Teachers).

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