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World Diffraction and it's usage

Submitted by [a dragonburned fool](#)

Posted on 3/15/2005 8:45:35 PM

This theory is an attempt to explain how the Wheel can detect turning points in lives and history, and how It can know when and how to intervene to fix the proper flow of the Pattern.

It is presupposed here that the Wheel is a mechanism with a relatively low degree of intelligence, actually a blind mechanism regulated not by any privileged controlling system, but by simple balance. It is not the only possible way to understand how the Wheel controls the Pattern, but I prefer it because of its simplicity. And it's the only model of understanding of the Wheel that allows any consideration about the exact mechanism of detecting turning-points at all.

The picture of the countless mirror worlds, some of them stronger, some weaker, makes me think about a certain optical phenomenon: diffraction, and especially a single diffracted ray reflected on a screen - an ordered array of dots, the central ones bright (the statistically more possible deflections of the ray), the outer ones dim (the statistically less possible ones). Now if the world can be reflected (as it is in Tel'aran'rhiod), then it perhaps it can also be diffracted, and a multiplicity of world images would occur, every one of them slightly different from the unbroken ray (due to the divergence) - exactly what we see in the mirror worlds.

Quote of the Moment

Blood and bloody ashes!

-Gaul

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Subatomic particles manifest both corpuscular and wave properties and there is IIRC a physical theory that this is also theoretically true about every physical object, so if the proper conditions happen a human body for instance could behave like wave, could be more wave than body in that moment. What if a whole world could have a wave nature and behave like an wave (reflect, diffract, interfere etc). It's not unlikely for Jordan the nuclear physicist to imagine the WoT world in terms of waves. And this Wave Mechanics of the Wheel also fits other aspects of WoT metaphysics like the turning of the Wheel (oscillation cycle), utilizations of the One Power (the way channeling is described is so similar to working with electromagnetic-waves-based devices: a channeler has to attune to the Source, so that the One Power must flow through the channeler like a current; the effects one can do with the One Power are effects of making it flow in specific way; the effect of One Power on their target object is more similar to its treatment by electromagnetic waves then to anything else; the saidar/saidin dualism of the One Power, that is said to be needed for the Wheel itself to work



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is similar to the dual nature of the electromagnetic waves), etc...

Only one wave is to be generated by the Wheel - that's the original world. All the mirror worlds are only diffractions from this first ray. That's because the events in the Rand's world have effect on the mirror worlds but not vice versa. However both the original world and the parallel ones are the same type of "electromagnetic phenomena", i.e. the same type of reality.

After outlining that model, let begin with the main part of the theory.

A part of Lanfear's explanations about the mirror worlds, as retold by Loial - from Great Hunt, chapter 16: "The Pattern has infinite variation, she says, and every variation that can be, will be."

The following is not an 100% obvious interpretation of this quote, but IMHO it's the most likely one: everything that could happen to everyone and everything in the world, happens in the Pattern, i.e. there is a mirror world for every possibility for every person or thing. But the greatest part of this variation has a very small degree of significance - so most frequently there is a disregardably small change in the world, for example affecting only a few minutes of the everyday life of a particular peasant. Such changes fade very quickly and the mirror world is practically indistinguishable from quadrillions of similar world diffractions. I'm suggesting that such worlds merge with each other and have a very little time of standalone existence. Only a few variations have large range consequences, and even fewer would maintain a noticeably different world after some time has passed. These worlds don't fit in the mainstream and remain standalone.

When a convergence occurs between similar worlds, the result is a more bright and solid mirror world. The more probable a world is, the more different variations end up in the same image (after some time) and so it is more solid. The less possible worlds are simply worlds that are combinations of fewer variations.

A note here - I don't say in any way, that the original world is just the most probable world - this connection between probability and solidity is true only for mirror worlds, i.e. for secondary reflected worlds, while the original world is the only wave generated by the Wheel, all other parallel worlds together with their diffractions and reflections are just derivative.

Actually the existence of stable mirror worlds manifests a possibility for the world to be changed (it must be visibly different at least in some place and time), as a mirror world is generated by a difference in a single event. So the consequences of that event shown in the stable parallel world can be easily traced to the crucial event in the beginning of the stable world. So we have a mechanism to detect turning points in history - where there is a stable different mirror world, there is a turning

point. The Wheel can detect these and can eventually intervene at this point and so it has a strong control over the history.

This function of detecting the turning points fits also with one of the few details we know about the original use of portal stones: Verin said that great things could be done with if-worlds via Portal Stones by those who know "the numbers of chaos". That looks too much like a hint to the mathematical theory of chaos, and the main application of the theory of chaos is to calculate turning points in processes.

Sometimes stable mirror worlds just exist - they are nothing but alternatives and, for a single mirror world not affecting the original world, the Wheel ignores them. But sometimes in a stable world a significant imbalance occurs, i.e. the result is damage or disaster for the Pattern itself. Such worlds can come to an end, where the Pattern mechanism is damaged or broken and that result is so different from the normal move of the Wheel, that a tension occurs between the parallel worlds and the Wheel has to do something with this tension. To cope with the tension in the mirror worlds, the Wheel has to change the structure of the actual mirror-worlds constellation, and to do this it have to change the way the original world is reflected in mirror worlds. And to do this it have to make some changes in the original world, by placing in it a strong and very reliable extraordinary factor, that would exclude some of the undesirable possibilities.

Particular lives and events are not important for the Wheel, only the changes of the whole world are significant and detectable. The singular events only change the probabilities for the future and that is what the Wheel detects. For worlds to be changed, a great amount of events is needed. What the world changing events do is to cause a great amount of other dependent events. So if an odd accident occurs, that must change the history, tons of other dependent events would occur, and that gives the Wheel time to detect the drastic change of the probabilities and to intervene.

One way of such intervention is to place a Hero of the Horn in the world. It's said in the books, that to become a Hero, "more than bravery" is needed. "Bravery" could be defined as the ability of doing what must be done, when the circumstances are very unfavourable for that, while lack of courage could be described as giving up on the "what must be done" and doing instead of it what the unfavourable circumstances require. Now, what could "more than bravery" mean? My interpretation is, that it's the ability to do just what is important for the Wheel, whatever else happens in the world. The will of normal people is very influenced by circumstances, while Heroes are reliable. Heroes enlarge the probabilities for the right result. A Hero could fail in some of his/her missions, or could die too early, but what he/she attempts to do would be the same and these attempts at least will have their influence on the world. The details in the different incarnations of a Hero could be very different, but the Wheel isn't interested in details. And that would be the

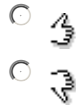
same in every incarnation of the Hero (like a realization of a prophecy could have tons and tons of unexpected details in it, but the core said in the prophecy remains true, and the Wheel could even not know how exactly a prophecy will be realized). Maybe the auras that Min views would be the same for every incarnation of a Hero. Maybe the Wheel choses a proper Hero in a way similar to the way it gives prophecies - a point in the future is chosen, where a lot of different probable worlds have the same favorable result (with only the insignificant details different), and that fits in the static destiny of the Hero.

Another way of intervention is the ta'veren. A ta'veren occurs when the tension between the favorable and unfavorable outcomes becomes so radical, the bad tendencies become so strong and invariant (like Rand's experience in the Portal Stone, where each of his different lives ends with Baalzamon's victory), that the Wheel decides to change that situation drastically simply by temporarily changing the rules of diffraction in mirror worlds, i.e. changing the laws of probability. When the bad outcome becomes more possible then the good outcome, the Wheel simply suppresses the probabilities leading to the bad one, and only less possible (and because of them odd) variants remain. The web of destiny occurs only in the location and for the period of time it's needed to cope with the tension in the mirror worlds.

The most drastic intervention of the Wheel is the end of an Age. It seems as if every Age has to end with a disaster. A possible explanation of that is, that after a time the mirror worlds are flooded and a large amount of current processes in the world must be terminated, and most of others so radically changed, that the greatest part of the past loses its influence on the future. The Wheel moves on to a new Age, a new piece of the Pattern.

So the Wheel can have very strict and reliable control on the world history even if there are no intelligent mechanisms in it to provide this. All that control could be maintained by a very simple mechanism. The Wheel runs all the possibilities, some of them become corrupted, and the Wheel tries to abort reflection of such possibilities by making them impossible in the original world. And it knows what must be done just by having it from the calculus of the good possibilities. That's all. Or, pardon me, not all, because there are also another worlds together with the if-worlds making the "warp and woof" of the Lace of Ages, so there is to be supposed another element in that wonderful mechanism of detection and control. But this is another question. The if-world system seems to be important enough.

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