

Some New Laws of Motion: Physics and Digital Writing

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Writing is all about motion. This whole weekend we've explored the ways writing is a constantly shifting state, how thoughts travel from one space to the next, and the different places these movements lead the writer and readers. So when I first saw the call for this conference, I immediately got excited that I could finally put my pet project to work. As a writer, being interested in physics always seems like a strange mix. And let me qualify "being interested in physics"—I'm not Einstein, nor am I anywhere close to it. In fact, I haven't taken a physics course since high school. But there's something about energy, force, and motion that makes a writer feel at home. We talk about – and enact – these ideas all the time. We need the energy to make it to the end of a writing project. Some days we have force the words on the page, while on others our ideas, words, and syntax all move together in one calm and clear motion. As writers, we are constantly enacting laws of motion even though we might not realize it. So for today's talk, I thought it would be interesting to connect some of the established laws of physics (Newton's laws, to be exact) to the ways we actually use these physics concepts in our everyday writing.

Ah, physics. I've always been intrigued by physics – well, as intrigued, confused, misunderstood, but that's besides the point – this conference was going to give me a chance to put into motion some of my hobbies. But then as the conference crept up on me (another not so exciting motion), I realized that I actually had to think through these laws of physics. So don't say I didn't warn you: there will be no formulas, mind-

blowing, or confusing jargon. Instead, what follows is a speculation about how we might cross some disciplinary boundaries between the sciences and the humanities in order to re-think what we do when we interact with technologies as writers.

So can Newton's laws of motion teach us anything about digital writing? Our digital writing is always on the move, even without our nudging to keep it in motion or our desire to delete posts to keep them at rest. In this paper, I suggest a relationship between these writing and physics that connect to motion in some exciting ways. In this paper, I construct a relationship between Newton's laws of motion, the automatic, feed-forward motion of digital writing, and the physical force we exert when we set-out to write. The laws of motion might take on a whole new meaning in relation to digital writing.

Anytime we write in digital spaces, we are automatically participating in what communication theorist Mark Andrejevic calls the digital enclosure, "the creation of an interactive realm wherein every action and transaction generates information about itself." Think about how your search terms can come back to haunt you. For instance, let's say you're looking for a new pair of shoes for an upcoming conference. You start Googling to see whether your local DSW has a better price than ordering the same shoes on Amazon. Without doing anything beyond hitting "dress shoes+prices+DSW," you set in motion a whole new set of information. You can't check your e-mail without banner ads suggesting shoe sites. Maybe these shoes aren't for a conference, but your browser thinks you're getting ready for a date, so you start to see "single men in your area" ads in your e-mail. Even when we shop for items on Amazon, for instance, our

consumerist patterns are re-presented to us as tailored suggestions for future purchases. Any form digital writing constantly produces an exponential amount of new information. In order map the relationship between the laws of motion and digital writing, I want to attempt to answer these questions: What forces act on our digital writing in order to cause change? What is digital writing's relationship to acceleration, force, and mass? For our actions in online spaces, what are the equal and opposite reactions that respond to our digital writing?

Before jumping in, a little review might go a long way. Here are Newton's three laws of motion to get us thinking in the right frame of mind. (from <http://teachertech.rice.edu/Participants/louviere/Newton/>) "Law #1: An object at rest will remain at rest unless acted on by an unbalanced force. An object in motion continues in motion with the same speed and in the same direction unless acted upon by an unbalanced force. This law is often called "the law of inertia". What does this mean? This means that there is a natural tendency of objects to keep on doing what they're doing. All objects resist changes in their state of motion. In the absence of an unbalanced force, an object in motion will maintain this state of motion. Law #2: Acceleration is produced when a force acts on a mass. The greater the mass (of the object being accelerated) the greater the amount of force needed (to accelerate the object). Heavier objects require more force to move the same distance as lighter objects. Finally, Law #3: For every action there is an equal and opposite re-action. What does this mean? This means that for every force there is a reaction force that is equal in size, but opposite in direction. That is to say that whenever an object pushes another

object it gets pushed back in the opposite direction equally hard. The rocket's action is to push down on the ground with the force of its powerful engines, and the reaction is that the ground pushes the rocket upwards with an equal force.”

In what follows, I take a look at each law of motion and consider some ideas about how we’re using currently it, could be using it, or how it might be “moving” in a different direction when paired with interactive technologies. Can we think about the physics of motion and the motion of digital writing together? Are there problems of thinking through digital writing by using scientific concepts as metaphors?

Law #1: There is a natural tendency of objects to keep on doing what they're doing. All objects resist changes in their state of motion.

That sounds like a familiar mantra we hear from writing coaches and fellow writers who have succeeded (aka finished their work). Writers must stay writing—you must keep writing all the time or else you’ll hit a wall and stop. But let’s try to think beyond the help-desk advice, and turn our attention towards that powerful combination of the writer and interactive technologies. I know, I know I said no formulas, but this one is just a word change—something we writerly folk have down pat. I want to “objects” to stand in for status updates, memes, and Tweets and “motion” to represent interest in these objects: repostings, retweeting, and forwarding. All of these “objects” will stay in motion until they are no longer easily findable, searchable (or, in the first page of search results), or worse, no longer interesting. Let’s face it—memes get boring. How many times can we find out 25 things we didn’t know about our Facebook friends. As with vaccinations, we become immune to the infectious power memes-in-

motion and we put an end to them by not posting our own factoids, deciding not to retweet, or gasp, unplugging for a few hours (ok who am I kidding, unplugging for a few minutes).

The beauty of Law #1 and digital writing is that inertia continues on its own. Once we write, post, even search for something, we set in motion the possibility of response and reaction. The digital enclosure that I mentioned a bit earlier seems to take it from there. By typing a small tweet, searching for new shoes, or posting our conference paper to the conference repository, we are initiating motion by simply placing the object at the top of the metaphoric hill and giving it a gentle push by clicking “submit.” The object will gather speed as it continues to roll (or, as it’s reposted, forwarded, or repackaged as a banner ad) until it another object works against it, forcing it to a halt. But how do we get these objects going again? Can we? Here’s where Law #2 comes into play.

Law #2: Heavier objects require more force to move the same distance as lighter objects

Again, let me suggest a small semantic switchero for this law. Let’s let “objects” represent any type of writing project and let “force” equal the personal effort it takes to accomplish that project. Heavier projects (book, dissertation) require larger amounts of force to get moving. Lighter objects (Tweet, status update) are quick and painless. How does the relationship between these two types of objects help us think about the needed force to get them accelerating at an appropriate speed? The larger the project, the more inertia it will take to complete. We might write a conference paper in one all night push, but we can’t complete a book manuscript that quickly. These objects take

time to get moving. A book is the culmination of years of pushing that heavy object towards the publisher. The larger writing project is the heavier object because we need loads of research, editing, blind reviewing, more editing, etc. to keep it moving. On the other hand, a small object like a Tweet or a status update doesn't require much effort at all. We all have that one Facebook friend (and sometimes it's even ourselves) whose posts reads like it took several drafts to compose that perfectly witty blurb. But more often is the case that these short pieces of writing don't take a whole lot of effort to get them moving. They are small, they move quickly and with great force. Think about how often you retweet, comment on, or like someone else's status. The movement in that action is simple—we don't need to think too much to participate in the moving dialogue. The object is set in motion very quickly and keeps moving until, as law #1 taught us, it hits that metaphoric brick wall.

Another way we might consider force could be readership. Sure we hope that our journal articles are read as much as a Facebook post might be, but that isn't often the case. I heard a statistic a few years ago (and couldn't for the life of me locate it again!) that an average of only seven people read published academic articles. In comparison, how much time do we spend each day reading small tid-bits posted by our electronic connections? Probably much more. We are more likely to simply click "like" or "retweet" someone's post because it doesn't take much force (or we're also likely trying to avoid expending force on another project we should be working on).

Readership-as-force, then, might be a self-fulfilling prophecy. The more popular a status

or book becomes on Amazon's site, the more often it will be spread, kept in motion, and recommended to others.

All of this leads to the final law.

Law #3: For every action there is an equal and opposite re-action

I'll admit, I struggled with this for a long time, and I'm not really sure what to do with this one. Originally, I thought that for every written word there's a read word, but that's not necessarily true, though. Just because we've written something doesn't mean that it's being read. There's an implied readership with all texts—unless we actually watch someone consume the text, we don't ever know for sure what's occurring with it once we've put the words down. Then I thought, well maybe writing on collaborative spaces, like a wiki, would represent an equal and opposite reaction. Let's say you edit some facts about your favorite tv show only to find them deleted later by another avid fan disputing your edits. But...if every action (editing the wiki) has an equal and opposite re-action (deleting the edit), then there would be no content at all. So maybe here's is where the metaphor between physics and digital writing comes to a close. Can there be an equal and opposite reaction for every written word? What might that re-action look like? Does putting the effort into getting ideas going count as working against the forces trying to silence our ideas? Does making the effort to write constantly – in digital spaces, privately, or otherwise – help us counter-balance the effects of not wanting to write or not having much to say?

I want close this paper with some brief final thoughts about the benefits and downfalls of using such scientific concepts for the purposes of an extended digital

writing metaphor. The idea of borrowing something so inescapable, like the laws of motion, to connect with the practice of digital writing doesn't seem like a far stretch. As I mentioned at the start of my presentation, as writers we are constantly thinking about the laws of motion, even unconsciously. However, as with any metaphorical overlap, there might be some limit to its scope. By the time I reached the third law, it seemed awkward and pushy to continue thinking about how digital writing might fit into the physics sphere. So maybe I can just leave paper by saying that digital writing is all about motion. It's about staying the course, accelerating at times, moving objects with different intensity, exerting more force on heavier projects and less force on small ones. It's the combination of the physical embodiment of writing—the inertia it takes to keep it going—with the mental acuity to make it interesting and keep it moving. Thank you.