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The SoTL Body: Identifying and Navigating Points of Entry

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The scholarship of teaching and learning (SoTL) as a field invites researchers to examine their teaching practice with the goal of understanding its impact and effect on student learning (Hutchings & Shulman, 1999). Though inclusive by nature – belonging to no discipline yet informing practice in all – SoTL does have its own discourse, assumptions, and literature that may intimidate disciplinary scholars. This paper uses the human body as a metaphor to explain how researchers from diverse disciplines can use familiar entry points to ease their transition into SoTL. We identify and analyze parts and systems of the human and research body, revealing connections between particular disciplinary research bodies and the SoTL research body – connections that we hope provide disciplinary scholars with the confidence they need to navigate and engage in SoTL.

Keywords

Scholarship of teaching and learning, methodology, research practice, disciplinary approaches

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The SoTL Body: Identifying and Navigating Points of Entry

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Abstract

The scholarship of teaching and learning (SoTL) as a field invites researchers to examine their teaching practice with the goal of understanding its impact and effect on student learning (Hutchings & Shulman, 1999). Though inclusive by nature – belonging to no discipline yet informing practice in all – SoTL does have its own discourse, assumptions, and literature that may intimidate disciplinary scholars. This paper uses the human body as a metaphor to explain how researchers from diverse disciplines can use familiar entry points to ease their transition into SoTL. We identify and analyze parts and systems of the human and research body, revealing connections between particular disciplinary research bodies and the SoTL research body – connections that we hope provide disciplinary scholars with the confidence they need to navigate and engage in SoTL.

INTRODUCTION: THE SOTL BODY

The body is our general medium for having a world.

Maurice Merleau-Ponty, 1962

As the Cold War came to an end and new forms of scholarship began to sneak past the academy's gatekeepers, Boyer and colleagues proposed the scholarship of teaching – the systematic study of the teaching process – as a means to better define, understand, and improve the work undertaken by faculty (Boyer, 1990). Later scholars reconceptualized Boyer's vision to focus on student learning as well as teaching, while also reinforcing scholarly standards (Hutchings & Shulman, 1999; Potter & Kustra, 2011). Now named the scholarship of teaching and learning (SoTL), the field was conceived as immensely practical and open, inviting scholars from all corners to come together and 'go meta': critically investigating their own teaching, the teaching of their colleagues, and determine how and whether teaching practices, broadly conceived, hinder or maximize learning (Hutchings & Shulman, 1999).

Scholars of teaching and learning hail from diverse academic disciplines, each with its own intellectual history, content, research methods, traditional pedagogies, and discourses. The disciplinary origins of SoTL scholars influence what is taught, to whom, when, where, how, and why. For many, SoTL flows from engagement with their own fields, which offer inspiration and direction while providing a natural audience for such work, because it is in these disciplinary communities that one finds colleagues facing the same educational issues (McKinney, 2007).

Yet, in approaching SoTL many feel intimidated by its inter-disciplinary or trans-disciplinary nature. Despite its openness, its generality, and its cosmopolitan attitude of belonging to no discipline and informing pedagogical practice in all, SoTL has its own conventions, assumptions, models, and literature that may strike disciplinary scholars as foreign. SoTL's challenge and its promise, then, are one: a reconceptualization of relationships between the disciplines, and a widening of the scholarly "trading zone" (Galison, 1997) within which disciplinary scholars who would not otherwise interact come to trade insights, ideas, and findings, negoti-

ating meaning all the while (Boose & Hutchings, 2016; Hubball & Clarke, 2010; Huber & Morreale, 2002).

As Schroeder (2006) recognized, "[t]he borders of our disciplines often make it difficult to see the trading zones between them and the many possible entry points" (p. 2). The best place to start introducing faculty to new scholarship is wherever they are already, recognizing their experience and knowledge of their local context, and understanding what they are trying to do in their own terms. In this paper, we use the human body as a metaphor to explain how researchers from diverse disciplines can use familiar entry points to ease their transition into SoTL. The SoTL body, like the bodies of disciplinary research and our own human bodies, has familiar entry points. Identifying these can make initiation into SoTL research familiar and meaningful. We begin by treating the research body as a general form common to all disciplinary and interdisciplinary forms of scholarship, including SoTL, just as the human body has a general form common to all members of our species (Figure 1). As a universal and inherently meaningful feature of every scholar's life, the human body is a uniquely relatable metaphorical source of identity. In the academy, our identities as researchers are similarly crucial to our sense of who we are and how we navigate and explore our own and other disciplines.

In the human body, all parts belong to systems, and all systems are interdependent. Without the strength provided by its ligaments and muscles, for example, the vertebrae of the spine would buckle under relatively low loads. Research bodies feature similar interdependencies between parts and systems, logical connections that are crucial to proper functioning. Once this is recognized, the parts and systems of the research body can be identified and analyzed, revealing connections between particular disciplinary research bodies and the SoTL research body – connections that should help disciplinary scholars navigate SoTL with confidence.

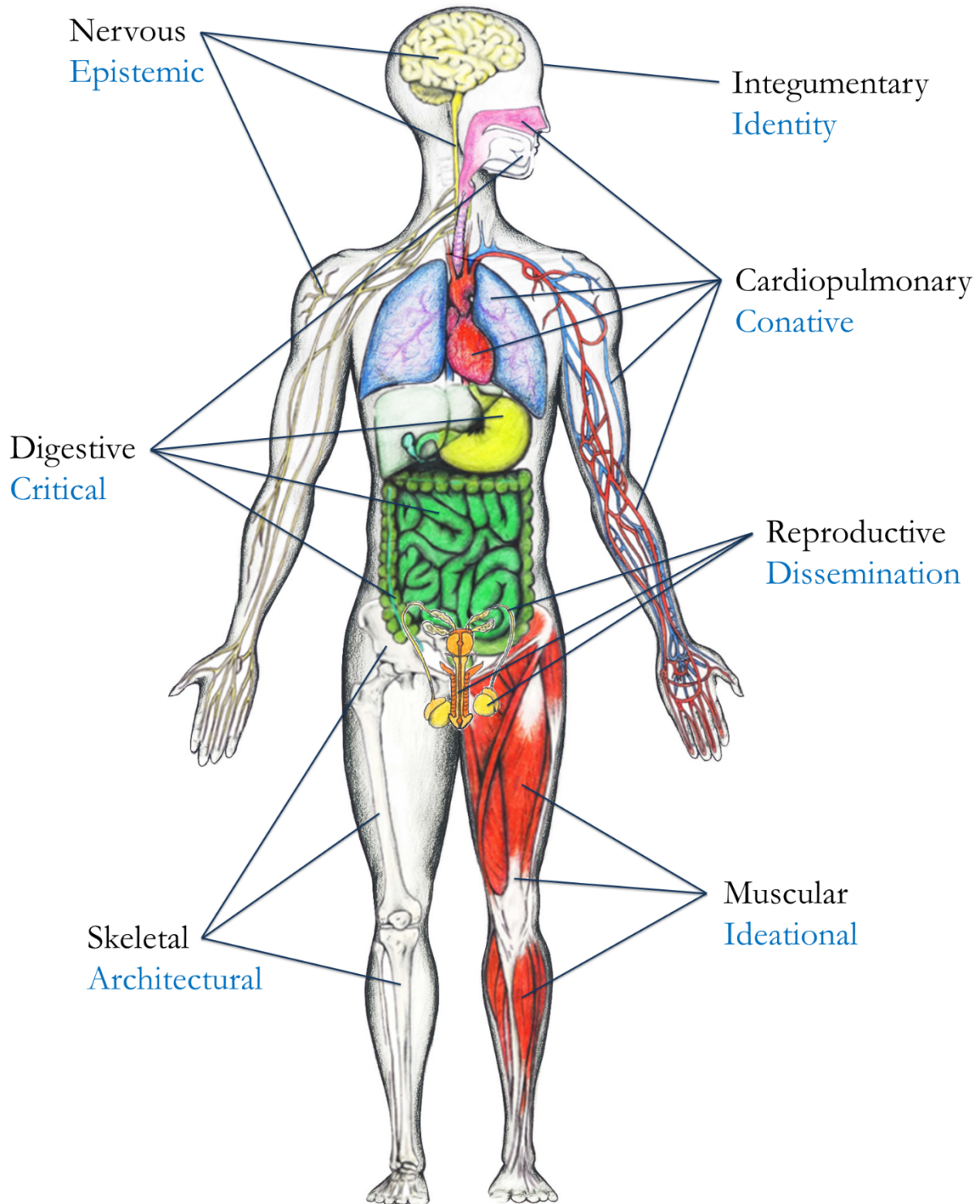


Figure 1. Corresponding systems of the human and SoTL research bodies. (Image compiled from original artwork by Suzanne Ali).

THE SKELETAL AND ARCHITECTURAL SYSTEMS: STRUCTURING AND PROTECTING THE RESEARCH PROCESS

The skeletal system of the human body performs three major functions, for our purposes: providing structure, scaffolding, and support for all bodily systems; protecting vital organs from injury; and contributing levers to make movement possible. Every other bodily system hangs on this scaffolding, and we recognize those systems in part due to their spatial arrangement, which is dependent on the way in which they sit within the structure provided by the skeletal system.

The skeletal system is not static; it changes in response to the pressures and loads it bears. When those pressures and loads are ongoing, the skeletal system may change permanently to adapt to them. In other cases, it is able to adapt on an as-needed basis. All bones are living tissues which respond to the loads placed upon them in order to accommodate to the type and level of activity undertaken. For example, the tibia of the lower extremity is longer and heavier than the fibula because it supports the majority of the body's weight during activities involving impact, such as running and jumping. Similarly, the vertebrae in the lower region of the spinal column are thicker and heavier than those near the head because the amount of weight supported by the lower vertebrae is greater than in the regions higher up in the column.

The structure provided by the skeletal system is important for other reasons as well. It provides protection for many of our most vulnerable organs, which hide within the ribcage, skull, and pelvis. Without the skeleton, other systems would be more vulnerable to harm. Finally, the skeletal system provides the body with levers for movement. Without these levers, our muscles and ligaments would not be able to perform their animating functions. Bones such as the vertebrae, pelvis, femur, tibia, and fibula – have attachment sites or landmarks, to which muscles and ligaments attach. These features enable muscles to cause the bones to move, and help to differentiate the bones from one another, making them unique.

Analogously, the skeletal system of research is the architectural system – the arrangement of parts that make research recognizable as research. Just as the bones of the skeletal system are generalizable and ubiquitous in human beings, the abstract structures of research are ubiquitous and generalizable no matter the discipline or field. All human beings have bones arranged in particular ways performing particular functions, even though they are distinct as individual persons with individual names and histories. And all forms of research share common elements, even though they are found in different disciplines and fields of study. Without these common elements we would not be able to call it “research”; like all concepts, the concept of research presumes and requires generalizable properties.

This does not mean that all research is “the same”, or that there are not differences between research from one field to another. There are differences, and those differences enable us to distinguish between research from different disciplines, to point at an approach and say “that belongs to sociology” or “that belongs to physics”. Yet, differences aside, for the purposes of determining what constitutes research – and for using that understanding to help us enter and navigate through a field of research that is

new to us – the commonalities are far more important than the differences. Recognizing this is a crucial entry point into SoTL.

All research contains the following elements:

1. *researchers* who conduct the research;
2. *motivation* that compels researchers to their activity;
3. *structure* of both practical (research process) and conceptual (theoretical framework) natures;
4. *ideas* including purposes, problems, questions, and objectives;
5. *jargon* used to think and communicate about the research, featuring technical vocabulary and syntax fine-tuned to the discipline's needs and refined through its history;
6. *criticality* in the research process, involving active collection of information as well as analysis, synthesis, and evaluation of information obtained, discovered, or created along the way;
7. *conclusions* that create meaning and sometimes knowledge from the process; and
8. *dissemination* that communicates the results of this work to others.

The particulars within each of these general features vary; some are more differentiated from cognate disciplines than others; some overlap considerably. Yet the set of features and their arrangement point to a second major function of the architectural system: providing structure, scaffolding, and support for all systems of research processes. The structures implied by the very concept of research support the enterprise by preventing it from slipping into chaos. The eight elements help to create a networked scaffold of pieces, their relationships partially defined, so that researchers have an understanding of what the form must include, and what holds it all together. The relationships between the elements inform each other, affect each other, and help us discern what we must do as we engage in our particular research processes. Schwab (1964) speaks of this function in terms of ‘disciplinary style’, writing that each disciplinary style guides inquiry, the “pathways of enquiry [scholars] use, what they mean by verified knowledge, and how they go about this verification” (as cited in Huber & Morreale, 2002, p. 2).

The relationships between the elements of research – the bones of the skeleton – reinforce and protect each other. Criticality protects our conclusions from veering into fantasy and keeps our ideas grounded; jargon enables us to articulate ideas precisely and accurately to others in our field, minimizing misunderstanding so we can collaborate with them and also so we can disseminate our results. And so forth.

Finally, the architectural system enables movement. Its fixed elements – those eight which make our work recognizable as “research” – may act as levers by other systems, particularly the ideational system. By providing stable points against which ideas can push and pull, the architectural system can provide ideas with much more power than they would otherwise have.

These bodily systems are a particularly useful lens through which to acculturate new SoTL researchers. Many scholars arrive to SoTL already familiar with their own discipline's research conventions and methodologies, as well as an understanding of what is considered *research* and what is not; viewing SoTL through these bodily systems reminds researchers that their own unique

approaches to scholarship can guide, and support, their entry into this field of study.

THE MUSCULAR AND IDEATIONAL SYSTEMS: ANIMATING AND SHAPING THE RESEARCH ENTERPRISE

The muscular system is comprised of connective tissue that animates the body, shapes it into something recognizably individual, and protects the body from injury. The primary utility of the muscular system is animation. Without the skeletal muscles, we would not be able to move. These parts of the muscular system are consciously controlled, contracting motors that create purposeful movement in response to electrical impulses, and generating force that is transmitted by tendons to bone. A byproduct of skeletal muscle contraction is heat, a process called thermogenesis. Generation of heat in this way serves to maintain the internal temperature of the body's core, a vital function that supports various chemical processes within normal operational ranges.

Aside from their animating function, muscles provide much of the individual shape of each person, as well as the general shape that makes us all recognizably human. The fleshier parts and segments of the muscular system, particularly, give shape and contour to each person. Thus, the muscular system plays an important role in our unique identities.

Finally, in conjunction with the skeletal system, the muscular system protects vulnerable parts of the body from injury. The abdominal wall, for instance, protects the internal organs between the ribcage and pelvis, while the muscles of the hips and shoulders help to keep the bones of those joints from slipping apart. Although it often seems strong to us, the skeletal system alone, without the soft tissues attached to it, is weak; it requires the muscular system for protection as well as animation. Without the muscular system, the skeleton would not be as adept at adapting to load-bearing and pressure changes. Because ligaments and tendons cross joints, they provide strength to the skeletal system and prevent it from falling apart. Muscle balance at joints is similarly important. For example, if there is an imbalance in the strength of one muscle group compared to another group (e.g., flexors are much stronger than the extensors on the opposite side of the joint), then injury can result. This can happen both acutely and chronically.

Analogously, the muscular system of research is the ideational system, the use of ideas and concepts to drive the research process forward and create something new. Structure alone will not generate anything. It will not move; it will not exist as research except in the most abstract formal sense. For the structure of research to become an active process, it must be animated by ideas. Ideas stimulate movement through all stages of the research process – and, in turn, ideas are generated from that process. At each stage of research, the ideational associations we make to the purposes and roles of that stage shape the approach we take to inquiry. Without the conceptual thermogenesis that results from this activity, research would freeze.

Just as the muscular system gives recognizable general and particular shape to the human body, the ideational system shapes the research process. With the architectural system, the ideational system provides the shape that makes a research process not only

recognizable as a research process, but also as a research process belonging to a particular discipline. At an even more granular level of particularity, the ideas that drive, direct, and emerge from our research processes help to make that research recognizably *ours*. A thousand studies in the same discipline will share structural elements with research from any discipline, and will be recognizable as approaches within a discipline by the particular way those structures are used, but they will not be exactly the same, in large part because the particular set of ideas that animates them will not be identical.

Finally, some of the ideas we bring into our research serve a protective role. These include, chiefly, the values that inform the ethical character of our research. By leading us to reflect and act upon the moral implications, consequences, and principles of our research, these ideas can protect its integrity. Without them, our research is vulnerable to dismissal. The values that inform our research must also co-exist in balance – lest they become harmful to the research enterprise. Thoroughness and diligence, in attending to detail, are laudable values. Though, being too thorough or diligent – either acutely in one study, or chronically over the course of a career – can prevent studies from progressing. Diligence must be balanced by other values, such as efficiency, practicality, and judgment – which must also be balanced, themselves.

Exploration of the muscular and ideational systems highlights an alluring contradiction with SoTL: on the one hand, scholarship on teaching and learning is inherently interdisciplinary as it invites scholars from across the academy and is open to a wide variety of disciplinary approaches, and yet what makes SoTL research distinctly SoTL – what sets it apart from other disciplines and disciplinary approaches – is its purpose and contribution: to enhance teaching and maximize learning.

THE DIGESTIVE AND CRITICAL SYSTEMS: INGESTING, ANALYZING, SYNTHESIZING, AND EVALUATING

The digestive system performs three major functions: breaking down the food we ingest, extracting nutrients from that food, and eliminating the waste that remains.

First we ingest what we believe to be food. Food enters through the mouth, where it is first broken down mechanically through the mechanism of chewing, aided by saliva. From there food passes through the esophagus, where glands add mucous that further changes the chemical composition of the food before it reaches the stomach. Enzymes and acids in the stomach change the food's chemical composition even further, while the stomach contributes mechanically through contraction. The stomach also lets us know when we have had enough food, and when we need more.

From the stomach, food passes to the intestines, where moisture and nutrients are extracted and absorbed. Food is pushed along the intestines gradually, allowing ample time for the vast surface area of the intestines to absorb as many nutrients as possible. What remains at the end of the large intestine is waste.

From the intestines, waste passes into the repository of the rectum, before it is eliminated from the body through the sphincters of the anus, the digestive system's organ of communication to the outside world.

The analogous digestive system of research is the critical system – critical in relation to the information we consume, which involves active rather than passive ingestion: analyzing (breaking down), synthesizing (reconstituting), and evaluating (deciding what is waste) what we take in.

Once we perceive information, we take it in, sometimes consciously and sometimes unconsciously. Thinking of the information available to us as a large platter of food, we could say that sometimes we sample a wide variety to determine what we find tastiest, or perhaps what we believe might be particularly nourishing. Or we may stick with the tastes we already know and love. Whichever approach we choose will have implications for the quality of our research. Before making a conscious decision to take information into the body of our research, however, we must ensure we chew it properly – begin to break it down, lubricate it, taste it fully. As we swallow the information, we begin identifying themes and key words, priming us for more in-depth critical work. We begin analyzing it into its components, mixing it up, churning it together with information we have already ingested, looking for evidence, conclusions, assessing the quality of the arguments we find, synthesizing new combinations out of the pieces of new information and the pieces of information previously consumed. At this stage we may realize we have enough information to move ahead, or we realize we need more, and the process begins anew.

From there, ideas must be extracted. Reasoning of depth and rigour takes time, so thankfully the intestines of research are long and absorbent. Here we gradually tease out what is worthwhile in the information we take in, extracting good ideas, truths, facts, valid and sound arguments, and promising new perspectives. The process is not only long, but difficult, sometimes turbulent, and thus may cause indigestion. Does the information help us answer our questions? Does it meet a need? Is it worth bringing into the body of our research, to become part of who we are? As information passes through this process, it gradually includes fewer worthwhile ideas.

Each contribution to the repository of SoTL is a contribution to the general pantry from which all scholarly teachers may be fed (Bernstein, 2013; Hubball & Clarke, 2010; Potter & Kustra, 2011). If we are not well-fed, we have trouble thinking. The digestive system of the human body is therefore critical to human thought. The critical system's role in improving our ability to think is even more obvious. Unless it is healthy, well-functioning, the quality of our research will be poor, which means the quality of our disciplines will be poor.

THE CARDIOPULMONARY AND CONATIVE SYSTEMS: KEEPING THE RESEARCH PROCESS ALIVE

The two major functions of the cardiopulmonary system are to enable life by providing oxygen and nutrients to cells – while removing the inevitable waste byproducts of life. The heart pumps to create pressure, circulating blood to all organs and muscles. This blood – a liquid tissue of cells floating in plasma – acts as a transport system, carrying oxygen, nutrients and hormones to cells that require these for life and growth. The blood moves through vessels, conduits to every part of the body. Arteries carry blood from the heart, while veins carry blood to the heart. Arteries tend to be located deeper, farther from the surface of the skin,

for protection, and the blood they carry is under higher pressure. Blood is re-oxygenated by the lungs when it moves through the pulmonary vessels, which make a circuit from the heart to the lungs and back. Also, as blood deposits oxygen and nutrients to cells, it picks up the waste product created from the activity of life: carbon dioxide. This waste is taken to the lungs, where it is exhaled out of the body into the atmosphere.

The cardiopulmonary system of research is the conative system, the ongoing drive created by curiosity and desire without which all research would die. Curiosity, the desire to know, the striving to create – all of these conative phenomena combine to create the pulse of research. Within our very own teaching practice is a limitless place of crisis, consideration, exploration (Bass, 1999): by using our classrooms as sites of research, SoTL researchers have the opportunity to embark on endless exploration of new knowledge (Cross & Steadman, 1996; Hutchings, Huber, & Ciccone, 2011).

Unlike the digestive system, the nutrients and waste products of the conative system are not themselves part of the object of research. They are emotional, belonging to the researchers themselves. What constitute nutrients and oxygen in this sense may be unique, even idiosyncratic. For many people, oxygen comes in the form of external validation. For others it may be the thrill of discovery, or solving a problem no one else has solved, or creating a new idea, or the reward may be intrinsic to the experience of engaging in research – ineffable and inexpressible. What all researchers share, however, is the need for some sort of emotional payoff to motivate them and thus keep their work alive. This is truly what drives SoTL researchers in their incessant examination of teaching practices, course design, program innovations, educational leadership, learning, and knowledge acquisition and retention, and more – to better one's practice, the discipline, the academy, and the wider community.

Similarly, the waste byproducts of the research system, in this context, are also emotional – exhaustion, hopelessness, frustration, despair. Again, this waste may take many forms, but some variety of it is an inevitable part of the research process, which needs to be exhaled and replaced with positively-valenced emotion if the process is to stay alive. If too much waste builds up and is not expelled and replaced with emotional nutrients, the research will die.

THE NERVOUS AND EPISTEMIC SYSTEMS: CREATING MEANING AND KNOWLEDGE

The function of the nervous system is twofold: creating meaning, and controlling the body. The human body really has two interconnected nervous systems relevant to each of the primary functions we focus on here: the central nervous system and the peripheral nervous system.

The peripheral nervous system connects the brain to information internal and external to the body, providing information about the external environment that can be acted upon. It contains receptors that are only responsive to certain kinds of stimuli – temperature, pressure, pain, pleasure, and so forth – and so do not send information unless an appropriate stimulus is present. The brain's CPU – the central nervous system – contains the brain and spinal cord. This is the integrating centre responsible

for receiving information from the peripheral nervous system and using it for decision-making, issuing commands, perceiving and processing stimuli, generating emotions and beliefs, storing memories, and creating, criticizing, and drawing meaning from the information it receives.

Without these two nervous systems working in collaboration, we would not be able to draw meaning from the information present in our internal and external environments. Without meaning, we would not form beliefs. And without beliefs, we would never have knowledge.

In addition, information received by the peripheral nervous system is transmitted to the central nervous system via electrical impulses called action potentials. Those potentials may be realized as actions, if the central nervous system commands a response. This is how we control and move our bodies.

The nervous system of research is the epistemic system, the system by which we create meaning through the research process, develop beliefs about what we have found, and ultimately, perhaps, discover knowledge.

At each stage of the research process, and within each of the metaphorical systems we have explained, we create meaning. Much of this meaning-creation is unconscious. As we design, think, read, analyze, and so on, we unconsciously attach meanings to these activities, perceiving connections, implications, contradictions and the like which we may later decide to investigate further. Consciously, we may create meaning based on past or present inputs – integrating ideas from our past with ideas in our present, perceiving them according to their associations, and perhaps not perceiving them at all if our remembered associations and meanings lead us not to perceive them as salient or relevant. Through these multiple, overlapping processes, we develop beliefs, some of them conscious and some unconscious. Our conscious beliefs may be further developed into knowledge.

We must make decisions about what to do with what we have learned through our research, decisions that affect and involve all of the other research systems that constitute the body of the enterprise. The epistemic system, then, is the overseer of the entire research process, the ultimate authority. This is specifically critical to SoTL work, as one of its main purposes is implementation, development, contribution to practice. In fact, many have argued that SoTL's impact – particularly on student learning – depends on its actual integration across disciplines (McKinney, 2012; Poole, Taylor, & Thompson, 2007).

Even though the nervous system is only 2% of our total body weight, it consumes 25-33% of our energy. The epistemic system is no different. Although the epistemic system is only one among many of our research systems, much of our energy as researchers is used to create meaning, question meaning, reinterpret meaning, and make decisions as a result of these activities – often while we engage other systems.

THE REPRODUCTIVE AND DISSEMINATION SYSTEMS: REPRODUCING AND DISSEMINATING INFORMATION¹

Biologically speaking, the driving purpose of the body is to reproduce. The three major functions of the male reproductive system are producing and transporting sperm and semen, transmitting sperm and semen for reproduction, and pleasure.

Sperm, the seeds of new life, are made in the testicles, then transported through the vas deferens to the penis. Seminal fluid – or semen – is a medium that mixes with sperm to nourish and keep them viable for reproduction. The chemical composition of semen is vital to ensuring the quality of the sperm that are eventually emitted.

The rest of the male reproductive system is a copulation apparatus, which expels sperm and semen in the hope of finding fertile eggs for reproduction. Most sperm will never result in reproduction – they will die with their intended purpose unachieved. But those sperm that are successful will help to create new life.

Finally, and we have indeed saved the best for last, the act of reproduction is intrinsically pleasurable. Even in situations in which fertilization is impossible, pleasure alone provides adequate motivation for the use of the reproductive organs.

Shulman (1999) wrote, “An act of intelligence or of artistic creation becomes scholarship when it becomes public; becomes an object of critical review and evaluation by members of one’s community; and members of one’s community begin to use, build upon, and develop those acts of mind and creation.” This brings us to the reproductive system of research: the dissemination system, the scholar’s means of communicating the results of research activity in the hope that others will find it informative and inspiring.

The communicative aspect of the research enterprise, is for many people, the point. The results of our work must be turned into something communicable, something capable of being understood by others, before we attempt to transfer them to other minds.

With the results shaped into a viable form and appropriate media selected, we transmit – and hope that the results find a fertile audience. Most of our work may go largely unread and unused. But every now and then we manage to inspire others to create, inform fellow researchers in ways that drive their own investigations, and even create new researchers with our work. That last possibility – the creation of new SoTL researchers – enables the continuity of research as an ongoing human endeavour. It begins anew with each reproductive emission. The hope of such fertilization – a hope that belongs in the conative system – invigorates the entire research process.

The pleasures of SoTL can be intrinsic (contributing something new to the literature, discovering whether a practice works, creating new concepts to aid understanding, confirming one’s self-identity as a SoTL researcher, satisfying a sense of curiosity) and extrinsic (being recognized for one’s contributions, being validated in a tenure or promotion process, connecting with other SoTL researchers). We can be motivated by both, but whether or not others read and use our research results, we often find reward enough in the pleasure of the process, for pleasure is a reward in itself, without need of justification, and functions as an entry point that transforms one who dabbles in research into a full-fledged researcher. The erogenous zones of research are under-appreciated.

THE INTEGUMENTARY AND IDENTITY SYSTEMS: THE SELF AS RESEARCHER

The integumentary system – our skin – has four primary functions: protecting the body from injury and contamination, providing

cutaneous sensations, storing subcutaneous fat, and giving us our external appearance.

Skin provides external identity, our physical presentation to the world, the public face with which other beings interact. Skin colouration is also a critical factor in one's external (and often internal) identity and affects how others identify and interact with a person. The integumentary system is thus superficial – skin deep – but critically important due to its potential to influence how the world interacts with us.

Second, our skin provides protection from external threats such as damaging ultraviolet light, pathogens, chemicals, heat and physical trauma. Its protective role is realized from its many layers, including the epidermis, dermis and hypodermis, and through various secretions onto the skin's surface. Its pallor and pigmentation are reflective of the presence of blood and pigment cells, with the latter playing an important protective role.

In addition, various receptors are located within the skin and provide the central nervous system with information regarding different sensory stimuli such as touch, pressure, temperature, pleasure, and pain. These cutaneous sensations affect our experience of the world, driving decisions, inspiring reactions, and arousing desires for more or less of a given sensation. The subcutaneous fat tissue which resides in the hypodermis serves as an energy reserve in times of need, while providing important cushioning and protection all over the body.

The integumentary system of research is, unsurprisingly, the identity system – how we present ourselves to the world, both the inner circle of researchers in our field and the outer circles of scholars from other fields and the broader public. This system involves more than the outer layer of publications, presentations, and grants by which our acceptability as researchers is often judged. It also includes the fatty tissue of jargon, methodologies, theories, and other academic accoutrements that we draw from in other systems.

We initially enter the worlds of our research disciplines – and particularly SoTL – naked, exposed, and vulnerable: the full monty. Over time, through our research output – its character, quality, quantity, media of dissemination, and all the choices that lead to and from those – the bulk of our external identities as researchers develops. We develop a thick epidermis that functions more like clothing than skin, for underneath that is still the bare skin of who we are as human beings, the deeper core beneath our identities as researchers. The precise nature of these identities will differ from observer to observer, based not only on which of our research products they have encountered, but on the ideas and associations they brought with them, and the meanings created in the relational space between us and them. Nor will the external identities others attribute to us be precisely those we wish them to see, for the same reasons.

In addition to the external identities that we develop in relation to others, we develop our own self-identities as researchers, which draw from multiple systems but are communicated via the faces we present to the world. The identity system thus helps us realize the value of integrity, protecting our own self-identities from serious disruption and from being overwhelmed by the identities others attribute to us, by developing protective layers of hopes, dreams, desires, products, processes, traditions, and perceptions that provide a stable core to our necessarily shifting senses of self – a core which we can use to make decisions that seem true to how we see ourselves.

Through the identity system we also experience social sensations by engaging with the broader world of research, encountering the myriad pains and pleasures that accompany any social interactions, all while gathering information that can be used by the epistemic system to create meaning.

Finally, we have the “fatty tissue” of research – the jargon, methodologies, theories, and other academic accoutrement that animate the research enterprise through the ideational system but can be stored just under the surface of identities as both a reserve we can draw from when needed, and also as a protective layer that shields us from harm, distancing us from those from other research traditions and especially from the broader public. Yet, we should recognize that everyone is speaking dialects of a common language. Although jargon partially distinguishes forms of research from each other, each set of jargon shares common elements with every other set. Jargon only appears awful and opaque when it is not our own. In breaking down the jargon of SoTL, using metaphors to help people understand the vocabulary and syntax of SoTL by relating to their own disciplinary research, we can break down some barriers and build confidence. Some disciplinary jargon is quite superficial in respect to the barriers it creates for entry, and some is deeper, pointing to fundamental perspectives and ideas that differentiate disciplines as forms of life. The superficial jargon is easy to understand once we make analogies between it and the jargon of our home disciplines. Learning the deeper jargon of SoTL, in some respects, means learning a set of entry-level threshold concepts. Either way, the language alone can function as an accessible entry point.

CONCLUSION: IMPLICATIONS FOR SOTL PRACTICE

We have used the human body, in all its complexity and personal relevance as a metaphor to explain how researchers from diverse disciplines can use familiar entry points to ease their transition into the scholarship of teaching and learning. The function of metaphor is twofold. The first, and more practical function is to allow for greater understanding of a new concept being described by relating it to one more familiar. The second function is purely artistic: to create an image that is beautiful, or profound, or memorable, or startling, or otherwise alters perception and interpretation. For these reasons, writers have used metaphors since the earliest recorded stories.

To help readers draw connections between the familiar and unfamiliar, we have used the metaphor of the human body, tying its systems to those of the “research body” and by extension, the SoTL research body. As a universal and inherently meaningful feature of life, the body is a uniquely relatable metaphorical source of identity. In the academy, our identities as researchers are similarly crucial to our sense of who we are and how we navigate and explore our own and other disciplines. Forms of research, like human bodies, have multiple entry points which, when identified and understood, can be used to ease the transition into new fields of research. By drawing metaphorical connections between the human body and the SoTL body, we hoped to emphasize that the research experiences, knowledge, skills, and conventions people are accustomed to in their home disciplines can function in the same way (and are analogous to the same conventions found) in SoTL.

SoTL is a heterogeneous transdiscipline in principle. It can be (though not always in practice) just as internally diverse as the

broader superset of academic disciplines. We already recognize that teaching and learning differ in some respects from discipline to discipline; we should recognize, too, that inquiry and exploration into these disciplinary pedagogical processes can be similarly diverse (Huber & Morreale, 2002) based on the home disciplines, skills, and interests of those conducting the research. SoTL need not be treated as a homogenous social science. Along with that diversity, we should recognize not only that the systems we have described are not in any way arranged linearly, but also that people may enter the SoTL process through different systems, and at different times. The relationships between systems, the entry points people use, and the paths people take as they traverse their SoTL processes are complex, overlapping, and often recursive. Yet, each system has its entry points nevertheless, which we can use, thinking of them as analogies to our disciplinary research systems, to ease our transition into SoTL and remind ourselves of the confidence we have already earned, as disciplinary researchers.

In closing, we wish to draw one more analogy: to sleep. In general, sleep provides all parts of the body with a chance to recover and rejuvenate. The degree of physical and mental fatigue characteristic of participation in physical and cognitive activities, is reduced following proper amounts and quality of sleep. Healing processes are enhanced during sleep as a result of the reduced activity level consistent with it. The potential for re-injury increases during dynamic, load-bearing activities characteristic of normal daily movement patterns.

When it comes to research, the analogue for sleep is spending time in activities other than research – relaxing, pursuing hobbies, teaching, frolicking – whatever it is that may provide balance to one's life so that one can return to research rejuvenated and refreshed.

NOTE

1. The decision of whether to use a male or female reproductive system in the metaphor was decided by the authors via the toss of a coin.

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