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Deception-based knowledge in Indigenous and scientific societies

American Indian tricksters and experimental research designs

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The emerging movement to decolonize the sciences, social sciences, and humanities has emphasized the differences between Indigenous and Western scientific ways of knowing. Paradoxically, emphasizing the difference between these systems has also been the principle undergirding modern science's claim to being a uniquely valid means of knowledge creation. Yet as each approach focused solely on contrasting Indigenous and scientific ways of knowing, potential similarities between these knowledge systems may have been ignored. One such oversight is the use of deception by each system, which is central to experimental research designs in the social and psychological sciences, and in American Indian trickster stories. In narratives recounted throughout American Indian societies, tricksters act from malevolence, greed, or generosity and are often catalysts in knowledge production. Similarly, it is the "experimental process" found in Western scientific systems that deceives subjects in order to elicit insights into causality, and such have been the results, that it has become a preeminent empirical method in the twentieth and twenty-first centuries.

Keywords: indigenous knowledge, tricksters, research practices and methods, experiments, Native American studies, science and technology studies

> *Nowhere would anyone grant that science and poetry can be united. They forgot that science arose from poetry and did not see that when times change the two can meet again on a higher level as friends.*
> —Goethe, *On morphology*, 1817

A growing movement within the discipline of Indigenous studies has sought to better explore localized, non-Western, and traditional ways of knowing. Although several intellectual movements over the twentieth century led to greater recognition of Indigenous knowledge within the academy (Wilson 2001), the study of Indigenous research methodologies (hereafter, Indigenous methods) was galvanized as an explicit project in the late 1990s and early 2000s (Smith 1999; Kovach 2010). This movement forwarded existing goals of Indigenous scholarship, emphasizing Indigenous peoples' knowledges and advancing research that would be of specific use for Indigenous communities (see Deloria 1969 in the context of American Indians in the United States). It is only in the last two decades that Indigenous-focused research has been more clearly organized around the goals of understanding, recognizing, and promoting Indigenous epistemologies, a position which holistically includes both knowledge content and methods used to ascertain such knowledge. This epistemological stance addresses the need to center Indigenous peoples within the academy (Arnold 2017), to assist in the decolonizing of knowledge-oriented institutions such as universities (Charles 2019), and to promote the value of Indigenous methods (Black Elk 2015).

Knowledge and the methods used to create it are not necessarily the same. However, they often are related; *knowledge* is understood as content, while *method* is an approach used to generate such content (Lee 1943; Hutto and Myin 2017). This paper deploys as its case study the use of deception as a mechanism in both Indigenous and non-Indigenous epistemic systems. While considering both the knowledge generated and methods used, greater emphasis is placed here on appreciating the methods used by Western scientific and Indigenous communities. When examining Indigenous methods in this context, it soon becomes clear that one question recurs: Must Indigenous methods of necessity be different from accepted Western scientific approaches? Reflecting on this conundrum, Swisher and Tippeconnic (1999: 289) observed that a current challenge for Indigenous methods is to maintain an emphasis on the necessity for "knowledge developed by Native researchers," while also asking "how will our methods differ from what has been done [by Westerners] before?" Such questioning leads to deeper, eliciting questions such as: Is it inevitable that Western and Indigenous methods be in competition, or can they work in complementary ways that enhance one another? What might mutual recognition and equivalence look like between these fields? We suggest, as evidenced in the deployment of deception, that certain Indigenous methods share significant characteristics with recognized Western sciences, and yet the similarities between the two methodologies are typically unrecognized by either knowledge-creating community.

One such methodological crossover between these seemingly disparate communities, is the use of deception as a tool to unveil hidden knowledge. In the social and psychological sciences, utilization of experimental research designs that rely on deception have become mainstays within research institutions and leading journals, considered to be state-of-the-art methodological practices. In what is clearly a vastly different context, deception is a method long utilized in storytelling by Indigenous peoples, as in the Potawatomi trickster figure Nanaboozhoo (Erdoes and Ortiz 1998). We suggest that, whether recognized or not, social and psychological sciences that use deception-based experimental designs, have commonalities with trickster figures deployed in many Indigenous communities in North America. In this case, Indigenous and Western methods share elements in bringing hidden or withheld knowledge into a form of realized knowledge. As such, we argue that these are not exclusively competing methods, and that synergistic commonalities should be recognized when present (Serres 1997, 2015).

Indigenous research methodology

An interest in Indigenous knowledge by colonists dates back to early contact between Europeans and Indigenous peoples of North America (see Chiappelli, Allen, and Benson 1976). Typically, knowledge of interest included what crops were viable and edible, how to access certain resources, critical details regarding seasonal weather change in what were novel surroundings, and the characteristics of other Indigenous communities (Mercier and Halbrook 2020). However, a distinction can be made between obtaining instrumental knowledge, and a more general interest that is borne of epistemic appreciation. The latter points to a developing appreciation of Indigenous epistemologies and a curiosity about another's knowledge system that was likely not central to those earlier interactions. Rather, colonial Western knowledge systems, whether by religious, scientific, or cultural imperatives, resulted in a hostility to, or disinterest in, Indigenous knowledge, methods, and epistemologies (see Deloria 1973).

Gazing from the colonial vantage point, interest in Indigenous methods within the academy was the origin of several social science disciplines which have evolved over the last one hundred years. Early research questions within anthropology in the nineteenth and twentieth centuries for example, often revolved around what Indigenous peoples knew and how they developed such knowledge (Frazer 1890; Tylor 1871). However, much Victorian anthropology focused on what Indigenous people did not know and the poverty of their empirical methods when measured against "advanced" European empiricism. From the mid-twentieth century major breakthroughs in the field, such as structuralism (Lévi-Strauss 1962) and ethnoscience (Sturtevant 1964), brought greater attention to the need to appreciate Indigenous epistemologies rather than disparaging such knowledge as purely utilitarian or instrumental (see Sahlins 1976). Despite retaining elements that are today recognized as having perpetuated pejorative stances, formative bodies of work of that time critiqued and interrupted much of the disinterest in, contempt of, or hostility to Indigenous ways of knowing that had defined engagement in the preceding centuries (see Cook-Lynn 2007). Yet, gaps remained and recent analyses of these studies, and anthropology more generally, have criticized early and mid-twentieth-century studies as attempts to salvage or record endangered Indigenous knowledge, rather than reflecting a genuine appreciation of what Indigenous communities may have contributed to the contemporary world and the advancement of human knowledge in toto (see Biolsi and Zimmerman 1997). Perhaps

the sharpest distinction between acquiring knowledge in Indigenous communities and using Indigenous knowledge to contribute to global knowledge and action is made by Linda Tuhiwai Smith in her book *Decolonizing methodologies* (1999). Smith extends previous research on Indigenous methods from Deloria (1973, Hermes (1998), and Warrior (1994), to argue that Indigenous methods and epistemologies should not only be the object of academic inquiry, but should be deployed to (a) support Indigenous communities and (b) forward Indigenous methods of inquiry. However, Smith's distillation posed a problem for Indigenous-focused studies in which researchers had not considered whether their projects had, or could have, beneficial outcomes for the Indigenous peoples who had been the objects of the research. In addition to aspiring to benefit Indigenous peoples and offer support for their communities, it became clear that ethical research should also redress the marginalization of Indigenous ways of knowing. Calls to "decolonize the academy" in both curriculum and research stem from these moral and epistemological insights, recognizing first that, in "decolonizing research, the researcher should center Indigenous values and follow Indigenous protocols" (Simonds and Christopher 2013: 2185), and then seeking to address a history in which Western "science marginalizes Indigenous methods and ways of knowing as denigrating them as folklore or myth" (ibid.). While commenced in anthropology and allied disciplines, adoption of these practices and incorporation of Indigenous methods has now extended into research within fields in the physical, social, and psychological sciences.

Twenty years after Smith's influential work, many in the field of Indigenous studies, among other allied disciplines, have recognized the emphasis on Indigenous methods as a timely and necessary intervention. The volume and variety of work on Indigenous methodologies across disciplines is too broad to comprehensively cover here, however we highlight the following across multiple disciplines: in the field of political science, Stark (2013) and Doerfler, Sinclair, and Stark (2013) used Anishinaabe storytelling as a method to rethink tribal sovereignty. In law, Borrows (2002) has imagined the ways in which "stories" or "myths" might serve as law, or foundations for law, in Indigenous polities. In education, Brayboy and Maughan (2009) called for the need to rediscover Indigenous methods of pedagogy. Burkhart (2019) has used the trickster figure as an example of how to expand traditionally European academic disciplines. In ecology, Berkes (2008) and Pierotti (2012) have argued that Indigenous worldviews should complement and guide government policy. In social work, Hart (2003) has expressed concern that the field

replicates colonial imperatives rather than considering how Indigenous peoples might instead understand their communities as flourishing. Working in gender and women's studies, Million (2009) has used the notion of "felt knowledge" as an experience that is as critical as "seeing" for generating worldviews. A greater respect for Indigenous knowledge and methods has also led to political possibilities outside the university. One example among many is that of the Walmajarri peoples in Western Australia, who in legal proceedings to establish Native title, had paintings accepted in evidence in the way that an older map might have held validity for Europeans (Brooks 2003). Within the United States, the 1990 Native American Graves Protection and Repatriation Act (known as NAGPRA)[1] has also brought greater recognition of Indigenous knowledge within legal systems (*Scientific America* 2018). It is difficult to imagine that these Indigenous ways of knowing would have been accepted by courts in settler societies in the mid-twentieth century.

Along with any paradigm shift, questions pertaining to boundaries arise. For instance, scholarship on Indigenous methodologies has grappled with how broadly to define the term "Indigenous" without being reductionist. For example, how does one authentically seek correspondence between knowledge systems of Maori in the Northern Cape and First Nations peoples in the Arctic Circle in Canada? Given that knowledge is often understood to exist within a geographic location or place (K. Basso 1996), what role might such knowledge have outside of those places? These are questions, among others, with which theorists of Indigenous research methodologies continue to engage.

While such debates engage researchers regarding perspectives *within* Indigenous studies, one stark question endures when considering Indigenous methodologies alongside those employed by non-Indigenous scholars: that is, the perception of inherent differences between Western and Indigenous methods. Scholars differ in their views as to whether Indigenous research methods as a discipline, should concern itself with rejecting or accepting non-Indigenous (i.e., Western) methods. There is however a general recognition that non-Indigenous methods have biases that inherently invalidate those valued by Indigenous peoples. One example of this disconnect is that "Western perception frequently interprets Indigenous peoples' lack of mechanical methods . . . as well as their

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1. Native American Graves Protection and Repatriation Act. 1990. Publ.L. 101-601; 25 U.S.C. 3001-3013;104 Stat. 3048-3058.

information gathering methodologies as evidence of the 'prescientific,' pre-causal nature of Indigenous knowledge systems" (Stewart-Harawira 2005: 37). Thus, a challenge for the study of Indigenous methods is to recognize and advocate for the potential of placing Indigenous and non-Indigenous methods (even those seemingly hostile to each other) into intellectual contact as peers. Advocating for such dialogue might allow for recognition of a plurality of methods, validation of different perspectives, in an environment of mutual valuation which was not a feature of past periods. The recognition of biases and respect for the importance of cultural cogency subsequently allows for comparisons as well as mutual recognition.

In speaking to the importance of narrative and storytelling among both settler and Indigenous populations, Levac and colleagues (2018: vii) discuss, in a comprehensive report to Canadian governments and First Nations, the benefit of identifying "linking frameworks" that "will enable more respectful and effective reconciliation efforts." They cite an often-mentioned example of the benefits of a plurality of knowledge: The Three Sisters in the Haudenosaunee (or Iroquois) creation story. In this, three crops (corn, beans, and squash) enhance each other and promote a mutual flourishing that, left independent of each other, is less pronounced (see Roots of Wisdom Project Team 2016).

Examples paralleling the Three Sisters story of cross-contact between Indigenous methodologies and Western ones are many. One area of direct relevance to our consideration of tricksters involves narratives and storytelling. In educational texts, it has been argued that using Western notions of storytelling to explore and understand Indigenous worldviews has led to culturally inaccurate descriptions of Indigenous peoples (Datta 2018). When comparing Western reductionist notions with those that center Indigenous storytelling forms as evidenced in oral traditions, it becomes clear that Western conceptualizations of stories as artifacts that are rigid, unchanging forms of entertainment, ignores the flexibility and utility that are hallmarks at the core of Indigenous storytelling (Datta 2018; Kovach 2010). Rather, traditional story sharing "is a method of gathering knowledge based on oral storytelling tradition . . . involv[ing] a dialogic participation that holds a deep purpose of sharing stories as a means to assist others" (Kovach 2010: 42).[2]

Indigenous and Algonquian tricksters

Many American Indian peoples in North America have narrative traditions featuring tricksters. The essential components of trickster figures have been a subject of debate within anthropology for many decades (Carroll 1984). If broadly defined as a fictional or semi-fictional being who uses deception to pursue its goals, the trickster is almost a ubiquitous cultural trait (Evans-Pritchard 1967; Bloom 2010). And yet, a trickster's role can differ not only between cultures, but within a single cultural group, making it difficult to generalize. When allowing for this diversity, scholars have compiled numerous theories about tricksters' underlying social and psychological origins.

Considering work within the field of anthropology, a general characteristic identified across many cultures is the trickster's "delicate balance between creativity and destructiveness" (Hynes and Doty 1993: 19). Claude Lévi-Strauss described their tricks as embodiments of a binary opposition between sexual desire and the order required for civilization (Hynes and Doty 1993; Carroll 1981). However, in focusing solely on elucidating tensions between opposites, this reading fails to recognise that the trickster is also an "enemy of boundaries" (Warn 2007: 23). Following a structuralist approach, Mary Douglas (1966) highlighted that in myths across cultures, tricksters prompt reevaluation of social norms by blurring boundaries, challenging presumptions, and inverting expectations. This liminal quality drew the attention of Carl Jung (1969), who appropriated the trickster as an archetypal character. Jung's trickster represented the collective unconsciousness and the amorphous knowledge found in this communal but illusive reservoir of wisdom. Bridging twentieth-century structuralist and psychological theories, anthropologist Jonathan D. Hill first explored how trickster narratives promote reflexivity in language (2002), before building on that to consider ways that trickster narratives are essential in allowing Indigenous communities to develop folk psychology (2009). This awareness of epistemological parallels

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2. In philosophical anthropology, earlier work on Indigenous dreaming and European psychoanalysis by Yengoyan

(1990) and Lear (2007) emphasized how dreams were individual experiences, recast as narratives and used to better understand the past and present. Through an analysis of collective dreaming among Indigenous groups in Borneo in the early twentieth century, it was shown that traditional Western perspectives of dreaming were not applicable to all contexts (Dove 1996). This challenge to a universal understanding of the nature of dreams as individual and past-oriented is supported by research on Crow dreams, which are communal and future-oriented.

between Indigenous trickster narratives and Western scientific disciplines is now also evidenced in Indigenous scholarship. Today Indigenous scholars utilize the trickster to bring new conceptual opportunities to fields such as philosophy that have not historically embraced Indigenous knowledges (Burkhart 2019).

While valuable attempts are being made to utilize trickster narratives to bridge the gap between Western and Indigenous knowledge systems, such efforts must be constantly vigilant to resist reductionism and retain the diversity of the trickster tradition. For while the trickster is evidenced across North America, there is no one identity common to all American Indian peoples; instead it is the narrative elements of themes and the plot elements that are shared. This means that while Hynes (1993: 34) identified three narrative characteristics that are shared by all American Indian trickster figures, ambiguity, deception, and shape-shifting, the figures themselves are distinct. To the Lakota, for instance, the predominant trickster figure is Iktomi, the spider spirit, who is often interpreted as destructive. Among the Great Lakes peoples, including the Ojibwe, Potawatomi, and Ottawa (see Radin 1914, 1956), researchers have explored the variety, richness, and cultural centrality of tricksters. For the Potawatomi, the preeminent trickster is Nanaboozhoo, the son of a deity of the wind, Epingishimook, and a human woman (Johnston 1990). To other Algonquian peoples, this trickster's name varies: Nanabush to the Menomini, or Manabush to the Ottawa, for example (Ritzenthaler 1970). As a shape-shifter, Nanaboozhoo appears as a raven, coyote, and hare. In popular American culture, Nanaboozhoo can be recognized in Br'er Rabbit, the cunning rabbit character from the Uncle Remus stories of the American South, a figure that is thought to have been based on American Indian (Baer 1980) and African tricksters (Gates 1988).

The storytelling tradition within which trickster narratives are located has meant that trickster figures including Nanaboozhoo have been the focus of literary studies for centuries. First mentioned in the seventeenth century's *The Jesuit relations and allied documents* (1633, in Thwaites 1896), Nanaboozhoo is most thoroughly recorded in the multivolume work, *Ojibwa texts* (Jones 1917). The work contains hundreds of Nanaboozhoo and other trickster stories collected and translated by William Jones, the first American Indian PhD in anthropology. Ojibwe and Anishinabek scholars have recently begun to bring trickster stories into the social sciences, political philosophy, and law. In one recent work, Borrows (2010) utilized the Nanaboozhoo trope to emphasize the importance of

doubt when considering those who tell us what we want to hear. Borrows recounts one story in which Nanaboozhoo has taken the shape of a dog and, speaking to a boy, alerts the youth to the possibility that "just because I said you couldn't trust me, doesn't mean everything I say is wrong" (Borrows 2010: 146). Here Borrows reminds readers that deception and lack of trust can also be generative, creating knowledge and deeper appreciation of truths, as revealed in the words of the boy: "You're right . . . I'm not going to trust you. . . . But I am going to learn from you. I thank you" (2010: 146).

Foundational figures in the humanities (Campbell 1991), social sciences (Frazer 1890; Lévi-Strauss 1955), and psychological sciences (Freud [1900] 2018; Jung 1998) have recognized that the trickster trope plays a significant role in storytelling and myth, exercising extensive power in all societies. Based as these figures were in Western ontological frames, when considering the trickster in American Indian cultures, their research particularly focused on storytelling. However, for Potawatomi, Ojibwe, and other Algonquin peoples, the trickster concept is not simply a character in a story, but is embedded in quotidian language and social interactions. For example, in the Potawatomi language, one greets another person with "bozho" which is short for "Nanaboozhoo." By doing so, one is recognizing the possibility that they may be meeting a shapeshifting trickster, and is calling out the possibility that things are not what they seem. Such linguistic constructions also centralize the concept of the trickster within a "civility register" (E. Basso 2007), whereby other people are placed into a culturally acceptable structure of linguistic and mythic relations.

Given the range of potential tricksters to use as examples, we have chosen to focus here on Potawatami encounters with Nanaboozhoo. This is in significant part because he is relatively well known in anthropology and folklore studies. Since it is from the fields of anthropology and Indigenous studies that much of the literature and energy promoting indigenous research methods derives, and those disciplines are generally familiar with American Indian studies, we feel that this cultural area may prove especially relevant. Finally, as Potawatomi who research what shapes perception, we feel most comfortable using stories from our community to draw connections between our experiences of Indigenous knowledge and the social sciences.

To illustrate different modes of deception and its operation within stories, the following are two paraphrased accounts of Nanaboozhoo stories taken from the first volume of Jones's *Ojibwa texts* (1917), which turn on a series of deceptions and illusions. A trickster is not solely

associated with deception, but is also instrumental to the process of learning and being willing to learn from both the appearance of things, things as they are, and the discrepancy between the two. "Reflection in water thought to be original thing reflected" was recognized as such a common theme in trickster stories that it was identified by Thompson in his cross-cultural *Motif-index of folk-literature* (1955: JJ191).

Nanaboozhoo and the cranberries

Nanaboozhoo walks along a path coming to a brook. He sees a large number of easily accessible cranberries while looking into the stream. He dives into the water to pick the berries, but they disappeared. He submerges over and over again but comes up empty-handed. His face is cut from rocks at the bottom of the stream. He is exhausted and frustrated, so he swims to the shore with blood clouding his sight. He cries with his eyes closed while sitting on the bank of the river. As the wind picks up, he begins to feel leaves brush against his face. He opened his eyes to see that he is surrounded by branches holding cranberries which he eats. (Jones 1917: 117)

In this story, Nanaboozhoo is tricked by the berries' reflection in the water, but also tricks himself into thinking that he could collect berries so easily. Here deception falls into two categories:

(i)   The reflective quality of the water deceives those looking into it.
(ii) Nanaboozhoo deceives himself into thinking cranberries could be so easily acquired without reaching up to pick them.

The cranberry story thus illustrates that something's appearance can be illusionary (shifting its shape), and other forms of perception, beside sight, may be necessary to attains one's goal.

In the second, more complex story, Nanaboozhoo intentionally deceives others but, as the story progresses, is himself deceived before the story turns again and he once more deceives others, albeit this time by accident.

Nanaboozhoo and the caribou

Nanaboozhoo is making his way along a path when he sees a caribou and accidentally startles it. Nanaboozhoo says that he has a story about the village he just departed from. Initially cautious, the caribou listens as Nanaboozhoo recounts that the people were massacring one another. As the story continues, the caribou gains interest

and draws forward. Nanaboozhoo describes the violence and tells the caribou that he will demonstrate how men in the village killed one another. Ostensibly for demonstration purposes, Nanaboozhoo takes out his bow, strings it, nocks an arrow, draws, and then unleashes it, hitting the unsuspecting caribou. Tricked, the caribou runs a short distance and dies.

Nanaboozhoo then builds a fire, butchers the caribou and begins to eat its meat, but he regrets not having anyone to share his meal. Distracted by his thoughts, Nanaboozhoo hears an annoying noise coming from high in a tree, and, believing it to be an animal requesting food, he climbs the tree and places his hand in one of its holes. A sudden gust of wind sways the tree and Nanaboozhoo's hand is stuck. While he is hanging from the tree, wolves see the smoke from the cooking fire. Believing there is likely meat nearby, the wolves arrive and eat most of the caribou. The wolves leave before there is another gust of wind and Nanaboozhoo is finally able to free himself and climb down.

Returning to the caribou, Nanaboozhoo is despondent, lamenting over the ruins of his meal. Determined to salvage something, he shape-shifts into a snake, enters the caribou skull and begins to eat the few scraps that are left. While inside the skull, he involuntarily shape-shifts back into a man, but his head is lodged in the caribou skull and he is unable to see. Nanaboozhoo runs around, hitting multiple trees before pausing and guessing the species of the trees from the topographic information: he is close to a river, and high on ridge. He makes his way past the trees and continues to run until he reaches a lake and begins to swim across. Nearby men, believing that Nanaboozhoo is a caribou, hunt him in their canoes. Running quickly to escape the hunters, Nanaboozhoo falls, accidently hitting his head on a rock, cracking open the skull and becoming free once more to see his surroundings. As he sprints away, Nanaboozhoo again tries to trick the people watching, saying "truly it was a caribou swimming along." (Jones 1917: 117–27)

In this more complex story, deception takes multiple forms, with some deception occurring between characters:

(iii) Nanaboozhoo creates a narrative about the past (a violent village) to hide the intentions of his current actions (preparing to fire his bow).
(iv)   The tree makes a noise which Nanaboozhoo assumes to be an animal, but it is not.
(v)   Nanaboozhoo is initially deceived by objects he runs into (trees).
(vi)   The men are deceived by the sight of the caribou head moving across the lake.

There are also self-deceptions:

(vii)   The wary caribou convinces himself that the story is worth hearing.

(viii) Nanaboozhoo, wishing for company with whom to share the meat, projects his desire and interprets the noise in the tree as a potential companion animal.

(ix)   Nanaboozhoo, despite wanting others to share his meal, is despondent when wolves actually eat the caribou.

(x)   Thinking he can salvage parts of the caribou, Nanaboozhoo believes that he has control over his shape-shifting.

These instances of deception are contrasted by other instances where knowledge is instead correctly, but also indirectly, inferred.

(xi)   The wolves correctly interpret smoke in the sky for a sign there is meat.

(xii)   Unable to use his sight, Nanaboozhoo correctly uses ancillary information to identify the species of trees.

The knowledge insights prompted for the listener throughout this story circle around perception—can perceptions be trusted, are perceptions accurate or inaccurate—and ultimately allow listeners to recognize that, whether intentional or unintentional, deception impinges on perceptions both between characters or within a character's thinking. It is as the trickster navigates between deception and truth that knowledge about deception, and thus perception, is communicated. Both these concepts recur within many Nanaboozhoo stories and those of other tricksters in North America, and exist more broadly in cultural narratives concerning what constitutes perception. The preceding cranberry story in Jones's *Ojibwa texts* (1917: 117) is one of the simplest trickster stories in which the trickster himself is tricked. It also provides an elaboration on deception, perception, and the potential perils faced when acquiring food.

Experiment and deception in Western social sciences

Scientific experimentation has a long history in European epistemologies. Despite scholars such as Bernal (1987) writing that Greece was not necessarily considered intellectually part of Europe until the nineteenth century, and that its borrowings from Asian and African traditions have been long overlooked, contemporary European scientific experimentation continues to trace its origins to Ancient Greece as the cradle of Western civilization. Several of the earliest experiments in the physical sciences undertaken in what we today refer to as "the West" were recorded as conducted by Archimedes, who is perhaps best known for his experiments on buoyancy in the fourth century BCE (Dalley and Oleson 2003). Experiments that might today be recognized as within the social sciences were sporadically reported throughout the Western world from antiquity through the Middle Ages into the modern era. Although likely apocryphal, Psamtik I of Egypt (seventh century BCE), Frederick II of Sicily (thirteenth century CE), and James IV of Scotland (fifteenth and sixteenth centuries CE) were each portrayed as having isolated children from adult language to determine if there were a "natural" human language (Campbell 1981). More historically verifiable experiments using control groups emerged in the seventeenth and eighteenth centuries to study the efficacy of medical treatments (Dehue 2010: 105).

Although the methodological details are not exact, the first use of deception in social and psychological research appears to have taken place in 1887, when Leon Solomons misled subjects about the tactile sensations that they would experience in his study (Korn 1997). The earliest use of a research confederate was reported in the early twentieth century when the criminologist Franz von Liszt staged a fake gunfight in his classroom, then asked his students to record what they believed they witnessed (Münsterberg 1908). Deception became more common within psychology as the field moved away from the study of psychological processes toward social psychology in the 1920s (Nicks, Korn and Mainieri, 1997). However, deception was not incorporated into the *Handbook of social psychology* until its second edition in 1968 (Aronson and Gardner 1968). With Stanley Milgram's (1963) experimental work dealing with compliance and authority, a greater interest developed in the efficacy and ethics of such methods, which brought closer examination of its methodological principles. These became models for other social experiments that sought to expose the inner tensions of human relations and behavior (Griggs 2016).

Two social experiments are described here to illustrate the multiple levels at which deception operates when used as a tool to create knowledge within the social and psychological sciences.

Piliavin's Good Samaritan studies

Piliavin and colleagues' "Good Samaritan" studies (1969, 1972, 1975) of helping behaviors in the New York City subway systems were highly influential in developing a modern, experimental understanding of altruism and its absence (Shotland and Stebbins 1983). Concerned that the infamous 1964 murder of New Yorker Kitty Genovese reportedly took place in front of bystanders, psychologists began to study the effects of urbanization on civic duty (Manning, Levine, and Collins 2007). Piliavin and colleagues' research set out to explore the conditions that gave rise to acts of concern for others. These experiments employed a variety of deceptions to uncover self-deceptions about human compassion and willingness to act.

In the Good Samaritan experiments a researcher posed as a subway commuter and would feign illness before falling to the floor of a subway car. Two additional researchers, also posing as commuters, would observe and surreptitiously record the reactions of bystanders. Of specific interest to the study were the likelihood and quickness speed of bystanders to provide help to the apparently afflicted under certain controlled conditions. The race, sobriety, and able-bodiedness of the person feigning illness were adjusted to ascertain their effect on bystanders' willingness to help. In the majority of conditions individuals were helped by bystanders. The greatest deterrent to helping behavior was apparent inebriation, a deterrent that acted yet more powerfully if the inebriated person was black. Another major finding of this study was an inverse correlation between the number of people in the subway car and the speed with which bystanders provided aid (Piliavin, Rodin, and Piliavin 1969).

Deception was a necessary component of the research design, featuring in several elements of this study:

(a)   The researcher deceived subway riders by pretending to be a commuter.

(b)   The researchers deceived subway riders by pretending to be onlookers when in fact they were recording subway riders' behaviors.

(c)   The researcher deceived subway riders by feigning illness.

(d)   The researcher deceived subway riders by pretending to be drunk.

(e)   The researcher deceived subway riders by pretending to require a cane to walk.

In a subsequent study (Piliavin, Piliavin, and Rodin 1975), researchers performed the same experiment but used

makeup to add a birthmark on the face of the apparently ill person, thus adding the following deception:

(f)   The researcher deceived subway riders by pretending to have a birthmark.

It was noted under this condition that subjects were less likely to help and took longer to help with the presence of this skin condition.

The research design thus deliberately deployed deception to acquire certain types of truths, specifically truths about forms of self-deception. Self-deception can exist at both the level of the individual and society. The results of the study demonstrated that several commonly held beliefs are in fact forms of self-deceptions:

(g)   People are willing to help those who have fallen ill.

(h)   People do not hold superficial characteristics against others when faced with giving aid.

(i)   People are more likely to help if there is a large number of individuals.

(j)   Inebriation is a bio-behavioral condition not compounded by race.

These generally held beliefs about human compassion and community, which were shown to be inaccurate by Piliavin and colleagues, were not solely the purview of common knowledge. The view that sociality and cooperation are the essential characteristics of humans is a pillar for a wide range of accounts in the social and psychological sciences. In his *Politics*, Aristotle famously writes that man is a social animal and not really human without connections to other people (Aristotle, *Politics* 1253a1). The degree to which larger cultural norms shape individuals, their values, and their actions, became crystalized in the social sciences through the much-utilized concept of *Homo sociologicus* (Dahrendorf 1973). Axelrod's synthesis (1984) of the evolutionary importance of cooperation promotes the role of altruism in creating functioning human societies. Even Durkheim ([1893] 2013), the founder of the field of sociology, built much of his social theory of modernity on the importance of social interdependence in urban environments. Thus, using deception Piliavin and colleagues called into question a previously accepted fundamental truth about human nature and the nature of community.

In order to further highlight the similarities between methods among tricksters and psychologists, we turn next to a series of social psychology experiments that focused

on deception. In the 1930s, the field of psychology began studying the role that social pressure plays in an individual's perception and behavior. Among the best known in the field are Solomon Asch's experiments (1951, 1955, 1956) on the degree to which individuals either conform to social groups or retain their independence (Friend, Rafferty, and Bramel 1990).

Asch Conformity Experiment
In Asch's most famous and elegant work on conformity (1951), researchers informed subjects that they were participating in an experiment on visual perception. Individual subjects were brought into a room with other people whom they were told were also research subjects. These subjects were, in fact, confederates of the researchers. Researchers showed diagrams with a single line to the left and three numbered lines to the right that varied in length. One of the lines on the right matched the length of the single line on the left. In this sequence of diagrams, it was obvious which of the three lines matched the original. Researchers then asked the group to verbally, in order, tell him which line on the right matched the line on the left. When verbally reporting which of the lines matched the others, confederates reported lines that clearly did not match. Although the actual research subject could distinguish the correct line, without regard to its obvious inaccuracy, approximately 30 percent of the time he or she reported the line that others reported.

Asch's experiment is built on several forms of deception:

(k)   The researcher deceives the research subject by telling him or her that they are in a study of perception and not an experiment on social influence.

(l)   The other individuals in the room are not subjects but confederates of the researcher.

(m)   The research confederates report incorrect answers to the question.

As with Piliavin's experiments on subway riders and both Nanaboozhoo stories, self-deception took place:

(n)   After the experiment, some subjects reported that after hearing the responses of others, they actually perceived the incorrect choices as being the similar-sized lines.

The studies on helping behavior in urban environments and the social conformity in reporting perception both use deception to unveil truths about how we know and act in the world. These canonical studies within the field of

psychology utilize methods, goals, and knowledge that resonate with those noted in the context of American Indian trickster stories. In the next section, we turn to a more direct and systematic comparison of these similarities.

American Indian tricksters and social science deception compared

The parallels between the operation of American Indian tricksters and deception-based social science experiments are significant. To organize such a comparison, we will examine: (1) the use of multiple types of deception and shape-shifting within each methodology; (2) the emphasis on perception; (3) the importance of self-deception; (4) the exploration of the relationships between things; and, (5) the view that the trickster and social psychologist are both figures that simultaneously transgress while also contributing to civilization.

Both social psychologists and American Indian tricksters use deception in diverse ways. As highlighted in the two preceding sections, a deceiving cover narrative can be used to hide one's true intentions as Nanaboozhoo *(iii)* in the caribou story, and psychologists *(k)* in Asch's experiment have done. Leaving out accurate or important information, in what Aristotle termed "deception by omission" (Holton 2001), is seen in both Nanaboozhoo stories *(vi, i)* and psychological experiments *(a, b, l)*. Likewise, physical shape-shifting is a component in Nanaboozhoo and social psychology narratives. Researchers change characteristics of confederates as a way to identify how seemingly trivial aspects of an individual's appearance *(a, b, f)* or action *(c, d, e, m)* can impact the behavior of others. Similarly, Nanaboozhoo commonly changes appearance by shape-shifting into different animal forms or using animal parts as disguises (Sinclair 2013). It must be noted that for American Indian listeners and readers, these changes are not solely instruments allowing Nanaboozhoo to attain his goals. Rather, the specific characteristics Nanaboozhoo takes on to mimic others communicates vital information to the listener about the essential qualities of a man, woman, animal, or supernatural being. When Nanaboozhoo's schemes unravel, which they often do, it reveals how essential qualities like the morphological characteristics of animals or the appearance of gender may in fact be misleading, and that attention should instead be given to their function.

Furthermore, deception does not solely take place *between* separate entities: intrasubjective deception constitutes multiple episodes in both trickster stories and

experiments. In these situations, rather than placing the agency for deception exclusively on the outside world, other characters, or the confederates, the perceiving subject takes a role interpreting within a context in which they lack full or accurate information. It is then those interpretations, which may themselves be inaccurate and thus deceptive, whether they are made by Nanaboozhoo, the wolves, or the subway riders as perceiving subjects, that impact the subject's perceptions in ways that guide their actions. Without recognizing these deeper intrasubjective forms of deception, readers of trickster narratives or social psychology articles may hold a simplistic belief that the forms of deception that influence actions are purely external to the individual. In this eventuality, readers only learn that the world is full of tricks. Instead, the incorporation of self-deception as a part of the lesson allows for new forms of knowledge to be acquired about how one sees the world and how limited one may in fact be, in ways that are not realized. To this end, individuals in these fictional or actual settings are shown to repeatedly self-deceive throughout both trickster stories *(ii, vii, viii, ix, x)* and experiments in social psychology *(g, h, i, j, n)*.

Both trickster stories and psychological experiments explore both accurate and inaccurate perceptions. Inaccurate sensory information is one component of being tricked, and when it is revealed, the difference between what one thought was real and what actually was real illuminates the conditions that influence the ways one sees and acts in the world. The story of Nanaboozhoo and the caribou provides accounts of how misperception can be intentional (*iii*) or unintentional (*viii, v, vi*), as well as relevant (*iii*) or irrelevant (*vi, viii*), to the progression of events. In Nanaboozhoo stories, accurate perception often relies on indirect information which can lead to attaining goals (*xii, xii*) and thus provides greater understanding into how knowledge can be created.

The story of Nanaboozhoo and the cranberries demonstrates the revelatory potential of learning to question sight as the sense that is an unquestioned or dominant source of knowledge about the world. This appears to challenge common sense, as luminaries such as Aristotle (*Metaphysics* 1.980a) place sight at the top of the hierarchy of the senses. However, the primacy of sight does not appear to be universal (Majid et al. 2018) and stories such as Nanaboozhoo and the cranberries, and its parallels found cross-culturally, may be one mechanism for moderating its unquestioned centrality. For Nanaboozhoo, sight was initially misleading, and being open to accepting tactile information gave him another option that proved more

accurate and rewarding (*i, ii*). Much of the power of Piliavin and colleagues' Good Samaritan experiments turns on slight alterations of what people visually perceive. Seemingly irrelevant visual evidence (*c, d, e, f*) in the context of apparently dire health emergencies influences the likelihood of potential life-saving action. The influence of sight in Asch's work on social influence is more complex since it is sight that gives the subjects their initial information, but it is also the sight of other subjects giving contrary responses that calls them to question their own perception (*m, n*). This complex double movement reflects folk attention to the role that social influence can have in occluding sensory information. Dell Hymes' (1981) analysis of interpretations of Chinook trickster stories identified this process of occlusion and the resulting inner tension created by disagreement between social formations of knowledge and those derived from sensory information, and the self-deception required to resolve the dissonance.

Trickster stories and social psychology experiments share an epistemological goal in seeking not necessarily what things *are* but how they are *related* to one another. This paradigm was identified and advocated by Gregory Bateson (1972) in the biological and social sciences and resulted in an epistemological shift to studying subjects not in relative isolation, but by observing how they interact with other parts of their environment. Researchers following this consideration are today referred to as adopting an ecological approach (Gibson 1979). Resonating with such situated approaches, Nanaboozhoo stories do not focus solely on what the trickster likes, feels, or thinks, but on how such phenomena emerge in relation to others. As mentioned in earlier sections, many of the Nanaboozhoo stories take place in a landscape of hunting and being hunted. Predation, as a mode of connection, is a theme explored throughout such stories. Other common themes based on relations between entities are sexual connections between men and women, and interaction between the supernatural and social worlds. Likewise, it was in the exploration of the interconnections between individuals and groups that the use of deception was most closely used in experiments in social psychology. As the Piliavin and Asch experiments demonstrate, an individual subject, their actions and perceptions, can be subtly shaped by the behavior and physical characteristics of others. Extended beyond social influence, experimental research designs, in general, seek to isolate the relationship between entities by control of a series of combination of variables (Popper 1959). In such a way, the advancement of experiment-based

knowledge, like trickster stories, is based on how things exist in the context of other entities.

Considering American Indian trickster narratives as approaching how individuals exist in the context of interactions with other entities means recognizing the multiple layers and rhetorical nuances mentioned above. The American Indian listener allows the apparent contradiction that tricksters are shown at one time to be destructive, reckless, and selfish, while also being cultural heroes responsible for civilization and culture. This paradox is highlighted in several articles by sociologist of religion Michael P. Carroll (1981, 1984). Trickster figures use deception for desires associated with their hunger, libido, jealousy, and anger—selfish and crude acts that are used as examples by American Indian communities to teach proper forms of individual behavior and responsibility. However, trickster stories often tell of how a trickster is responsible for a fundamental aspect of civilization such as agriculture, hunting, religion, or social relationships. Without the situated reading of trickster narratives, it is too easy to find irreconcilable this paradox between cultural hero and villain.

While we may see significant pedagogical value in depicting both lauded and condemned trickster behaviors, the works of social psychologists in the field of social relations have also been celebrated and condemned. However, in their case there is little to recommend those vilified. Often within the context of the rise of Fascism, the Holocaust, and World War II (Kaplan 1996), social psychologists in the latter half of the twentieth century investigated how people were capable of being influenced to aid or harm others (Nicholson 2019). The specific question over how to make people "good" or "evil" became part of the broader question about the emergence of sociality. By bringing greater clarity to the dynamics of social connections, social psychologists were thought to have contributed to the arc of civilization (Miller 2004). However, their methods have come under ethical and empirical scrutiny (see Haggerty 2004). Perhaps the most famous experiment revealing the extent of coercion to promote harm was Milgram's work on obedience which has also become one of the most ethically criticized (Tolich 2014). Concerns about the immediate experiences of participants during the study, its long-term effects, the degree of deception, and the lack of consent, all brought about today's systems of ethics approval (Yanow and Schwartz-Shea 2018). In both academic (Haslam and Reicher 2012) and public formats (*The Tenth Level* 1976; Blass 2009; *Experimenter* 2015), Milgram and other social psychologists have been presented as selfish, reckless, and destructive

researchers, albeit having worked to contribute to the knowledge necessary for civilization to progress.

Differences between American Indian tricksters and social science deception

While this article's focus on similarities in knowledge creation attempts to balance the overwhelming trend in scholarship to see difference, it must nevertheless be recognized that variation exists in how deception is used by social science and American Indian communities: the social setting and the process through which knowledge is produced fundamentally differ. In American Indian communities, trickster stories have generally been transmitted through oral storytelling in familial, social, and intergenerational context (Hill 1997; Toelken 1976). Stories are produced for entertainment as well as conveying values and knowledge (Cajete 2017). A precise measurement is not available for the degree to which a storyteller borrows from their elders, responds to other contemporary storytellers, or invents or alters a story; however, both fidelity and improvisation are respected elements of this medium (Silver and Miller 2000). Tricksters, and the meanings they impart, are constructed through the discursive form of narrative rather than so-called rational or logical arguments.

While transmission of knowledge derived by use of deception in the social sciences departs from trickster stories in several of the aforementioned ways there are also similarities. Knowledge in the social sciences is created in a social setting, typically comprised of research and educational institutions. However, while the research team is organized by a hierarchy, the unit is not defined by familial, cultural, or ethnic grouping. A further difference is that transmission of social science knowledge is mostly in the written form after verification by peer attestation of the methodological specificity and the processual or statistical standards of the field. The work's ability to connect with existing issues and patterns, while simultaneously deviating from or extending those patterns (Thurner et al. 2020), is, as is the case for trickster narratives, a key factor determining the degree to which knowledge is spread among the research community. Although an ability to interest audiences, and thereby garner future funding, is important for academic research outputs, presentations are not often organized around their ability to entertain and the use of humor or entertainment is not foregrounded in the academic production of knowledge. The social sciences' discursive use of a logical argument rather than

narrative is perhaps the most significant content-oriented difference between these two communities in how knowledge is created (Macagno and Rapanta 2020).

Conclusion

One of Vine Deloria Jr.'s many contributions to the field of Indigenous studies was his bracing critique of Western and colonial systems' diminishment of Indigenous knowledge as myth or superstition (Deloria 1973). However, Deloria's intent was not solely to pinpoint some of the fallacies of Western notions of science. Deloria went further and identified previously unimagined parallels between the religious ontological foundations of Western science and Native American sacred narrative, and between the ratiocination of post-Enlightenment Western science and the empirical knowledge of American Indians. In this pursuit, Deloria went as far as to analyze the works of Newton and Descartes within the context of American Indian knowledge (Deloria 1978: 12). Pursuing a similar insight, Marshall Sahlins (1999: v–vi), in his assessment of twentieth-century anthropology, cited two broad challenges faced by Indigenous communities in having their knowledges recognized and respected. First, colonialism damaged much of their material ways of life in which their knowledge was intrinsically embedded. Following the destruction of lifeways, the social sciences too often diminished American Indian cultural and intellectual worlds by defining them in terms of their differences to the so-called modern West. Like Deloria and Sahlins, we maintain that although many Indigenous methods may differ from Western forms of knowledge creation, they are not defined by that difference. We expect that most contemporary scholars would likely agree. However, the scope and tenor of much of today's work reifies the very mistake about which Deloria and Sahlins warned. Ignoring, or at best blind to such cautions, contemporary research has often used Indigenous methods to critique Western science (see Smith 1999). When critique was not explicitly its objective, research has fallen into older patterns and too often emphasized not only the differences but binary oppositions between these epistemologies. By employing such strategies, recent scholarship can implicitly define and thus restrict Indigenous methods as "counterculture" (Sahlins 1999: v).

Yet, is this emphasis on difference only found within fields such as Indigenous studies or critical theory? What about the more general fields of anthropology or psychology? Instead of rearticulating the analysis in earlier sections, here we place the similar use of deception within a wider context of studies of knowledge creation within the contemporary social sciences. In the relatively infrequent cases where the similarities between Indigenous knowledge and Western science are made compatible, research that articulates such consonances typically emphasizes knowledge at two extremes: the materially instrumental and subjectively sapient. For example, Indigenous knowledge among peoples in the Andes has been celebrated for its ability to use the brightness of stars to predict, with similar accuracy to modern meteorology, complex weather patterns months in advance (Orlove, Chiang, and Cane 2000). Or, at the other epistemological extreme, convergence has been identified in the subjective and existential milieu in colloquially referenced "wisdom." Such popular works as *The power of myth* (Campbell 1991) and *Maps of meaning* (Peterson 1999) have famously merged modern psychology's interest in systems of meaning with Indigenous constructs found in myth. These have had wide-ranging influence as guides for so-called "modern" subjects experiencing anomie.

Several earlier works in anthropology also aimed to bring tricksters, deception, and storytelling among American Indian communities into a generalized form of knowledge within anthropology and folklore studies. Toelken's analysis of the Coyote trickster among the Navajo explored how deception was essential for Coyote who was understood by Toelken to be "an enabler whose actions, good or bad, bring certain ideas and actions into the field of possibility, a model who symbolizes abstractions in terms of real entities" (Toelken 1976: 156). More recently, Burkhart (2004) integrated the Coyote trickster and classical Greek philosophical myth, observing that the figure of Coyote and Thales of Miletus both ignore land-centered knowledge and suffer as a result. Thales, the astrologer, ends up in a ditch after contemplating the sky and Coyote, unwilling to listen to his relations and the land, follows the wrong path. Gregory Schrempp's work (1992, 2012) also foregrounds several areas of convergence between mythic and scientific inquiry, perhaps none more so than the fundamental impetus to make the unknown known (2012: 226). He has used Zeno of Elea, the fifth-century BCE Greek philosopher, to demonstrate how science and narrative myth might work against each other (2012). Zeno's paradox of Achilles and the Tortoise, wherein the warrior can never overcome the terrapene, is used to elevate the scientific method by breaking down and categorizing the relative relationship between time and distance. Yet, perhaps because of the risk of being considered acts of appropriation or forced manipulation of

Indigenous narratives into a Western canon, such synthetic approaches have yet to emerge into a contemporary movement within the academy to investigate congruencies beyond a sociological model.

Working in what could be read as the opposite direction to the above synthesis by drawing parallels between Indigenous knowledge and the Western canon, Bruno Latour and Steve Woolgar (1987) instead *indigenized* the process of knowledge production deployed in scientific communities. Latour and Woolgar highlighted the local and social processes that defined scientific inquiry and thus, in a sociological sense, pulled "science" off its ivory tower and brought it to the level of other forms of knowledge creation. While Latour's attempts to dissolve the uniqueness of modernity (1991) did not necessarily elevate the perception of Indigenous methods, it indirectly placed them on a par with science. Exploring the situated context in which Indigenous relationship-building can become not only the foundation for knowledge creation, but the actual knowledge that is created, Shawn Wilson's *Research is ceremony* (2008) aims to raise recognition of the validity of context in knowledge production. In both approaches, the sociological context, rather than content or techniques, are the subject of analysis.

The emphasis on difference has not exclusively been the mainstay of politically or sociologically informed ethnological research within studies of knowledge formation. Few theorists have held as much influence over anthropology as Eduardo Viveiros de Castro during the last twenty years. His major contribution was placing some Indigenous knowledge as so radically incommensurate to science that "ontology" rather than "epistemology" was needed to theorize the differences between Indigenous and scientific methods (1998). As a major successor to Lévi-Straussian structuralism, Philippe Descola (2013) has also promoted a schema, albeit more gradated than that of Viveiros de Castro, emphasizing the differences in how science and Indigenous societies understand the world. The similarities between Indigenous and scientific method's use of deception in knowledge creation does not negate the work emphasizing difference. However, overlooking the similarities leaves the analysis of epistemology, American Indian culture, and social science deceptively one-sided.

Acknowledgments

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