Chapter 2
Introducing Pragmatism

Abstract This chapter briefly outlines Peirce's pragmatic maxim that was the basis of his philosophical ideas. It explains that pragmatism is a logical method of inquiry that aims to arrive at an understanding of a concept, statement or proposition in terms of its practical outcomes or effects. For Peirce, inquiry is about being able to think clearly using a scientific method which is grounded in logical, inferential reasoning based on the resolution of a doubt to arrive at a belief. Once established, a belief leads to the establishment of a habit, a way of thinking. A habit acts as a rule for action and can therefore influence and determine our behaviour. Peirce made a distinction between belief and doubt, where doubt is the start of the questioning or inquiry process and belief is the outcome of answering a question or coming to a conclusion as a result of the inquiry. However, Peirce argued that all beliefs should be treated as provisional, due partly to our fallibility as human beings, as well as the amount of knowledge that we simply cannot access in our own lifetime. Therefore, the most we can claim about our beliefs is that we think they are true. Brief examples are used to illustrate how Peirce's ideas can be applied to learning, the development of conceptual understanding and educational leadership.

Keywords Peirce · Pragmatism · Pragmatic maxim · Education · Learning · Practical effects · Belief · Habit · Doubt

Peirce's pragmatic maxim, or pragmatic principle, is the basis of the philosophical ideas that he developed over his lifetime. The account offered in this chapter will draw on a selection of his writing between 1877 and 1906. Rather than map the development of Peirce's ideas over this period of time, the aim will be to offer some clarity about what pragmatism is. Even though the details changed and developed during this period of time, the overall direction remained the same.

To begin with, in the 1870s, Peirce wrote a series of articles under the general heading of 'Illustrations of the Logic of Science' that appeared in the magazine *Popular Science Monthly*. An early discussion of pragmatism appeared in two of these articles, 'The Fixation of Belief' (5:358) and 'How to Make our Ideas Clear' (5:388). The former appeared in November 1877 and the latter, 2 months later, in January 1878. If you are new to the ideas of Charles Sanders Peirce, then reading

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these two articles might be a good start to developing an insight into his philosophy. Be warned, though: his style of writing makes his ideas very challenging—but perseverance will be justly rewarded.

In these early articles, we see the outline of Peirce's thinking and the first introduction of a number of important ideas in his pragmatism. Many of these ideas will resonate intuitively with those of current-day educationalists and social and educational researchers who claim to employ a pragmatic approach to their inquiries. They will also probably appeal to those who are drawing on pragmatic ideas in their thinking, but are unaware that the source of those ideas may be the philosophy of Charles Sanders Peirce, the founder of pragmatism.

The Pragmatic Maxim

Peirce was concerned with how we were able to reach a clear understanding of an idea or concept. At the time Peirce lived and worked, it was accepted that this required two considerations: first, the clarity of an idea but also second, its distinctiveness.

It was believed that a clear idea was one that we were familiar with and so could recognise it whenever we came across it and not confuse it with any other idea. If an idea was not clear, then it was obscure. On the other hand, a distinct idea contained nothing that was not clear, due to its precise definition in abstract terms. So, if an idea was not distinct, then it was a confused idea.

The task, therefore, was to provide a clear and distinct definition that differentiated that idea from all other ideas. A definition, of course, would be an abstraction of the general, common characteristics of whatever was being defined. For example, the Oxford Dictionary of English definition of education is 'The process of receiving or giving systematic instruction, especially at a school or university' (Soanes and Stevenson 2005, p. 554).

Peirce, however, believed that definitions provided only the start of an understanding of an idea. Consequently, he argued that it was time to develop a way or method of thinking that resulted in a higher degree of clarity in our understanding. For Peirce, that method was pragmatism. In brief, pragmatism provided a logical method of thinking and of inquiry that aimed to arrive at the meaning of a concept, statement or proposition in terms of its practical outcomes or effects. In Peirce's words, this pragmatic maxim, or pragmatic principle, invites us to:

> Consider what effects, that might *conceivably* have practical bearings, we *conceive* the object of our *conception* to have. Then, our *conception* of these effects is the whole of our *conception* of the object (5:402, italics in original).

Peirce's pragmatic maxim is not easy to grasp at first reading, which of course is somewhat ironic given that it first appeared in his article, 'How to Make Our Ideas Clear'. However, it is worth bearing in mind that the indelible connection between action and thought is one of the main identifying characteristics of pragmatism,

where action is the practical effect or consequent of thought and ideas. In other words, and put more simply, our ideas and theories must be founded in experience and linked to the practicalities of that experience. It is the nature of that link and its significance for human understanding and knowledge that are the focus and business of pragmatism. According to Peirce, this was the only way to make our ideas clear.

Peirce's basic principle of linking theory with experience and practical matters went against the long accepted view that understanding about the world was derived from knowledge abstracted from systematic, rational thinking. Such knowledge had two important characteristics: it was independent of the knower and it ignored the practical impact of that understanding. Peirce's pragmatic maxim, however, provided a view of knowledge that challenged a more conventional perspective of how we come to understand the world, and perhaps more importantly, the methods we employ to arrive at that understanding. Indeed, pragmatism grew out of the rejection of the traditional epistemological divide that pitted rationalism against empiricism, a divide that was based on the duality of mind and body. These traditional, historical perspectives aimed to identify a means of arriving at certain, true beliefs that were the foundation of our knowledge and understanding of the world. For empiricism, this foundational knowledge was the evidence of our senses; for rationalism, it was logic, mathematics and intuition that addressed the need for certainty. For Peirce, however, developing knowledge and understanding of the world started with the pragmatic maxim.

Peirce believed that there were many ideas that scholars and academics had accepted as being true for well over 200 years. He believed some of this received wisdom was inaccurate but such ideas had become the basis of our knowledge and how we came to acquire that knowledge. But he believed these ideas had never been successfully challenged. In particular, he was scathing of the ideas of Descartes (1596–1650) and Leibnitz (1646–1716) that were accepted almost uncritically at the time he lived.

Descartes, from whom 'I think therefore I am' originates, believed that our ideas should be made clear through the process of *introspection*. But Peirce, in his characteristically dismissive tone, pointed out that 'The distinction between an idea *seeming* clear and really being so, never occurred to him' (5:391). Just as critical about Leibnitz, he gibes that he was a '…great and singular genius [who] was as remarkable for what he failed to see as for what he saw' (5:392).

It was Leibnitz who argued that we should rely on providing an abstract definition of every important item to try to clarify our ideas. According to Peirce, however, this was a major error and, despite its long-established acceptability and respectability as a credible method in philosophy, did not result in any new understanding or new knowledge.

Referring to the definition of education above, it is unlikely that defining the terms in the definition would develop any new understanding about education. This is especially so when it is discovered that the term *instruction* is defined as *education*.

So, what was Peirce's argument? He accused Leibnitz of not understanding that new knowledge or information could only be based on using observational methods. The part played by our mind was that of transforming that information, not originating it. His criticism reflected his antipathy to Cartesian epistemological rationalism that privileged knowledge based on intuition and reason, as opposed to empirical, sensory experience.

To illustrate his argument, Peirce used the concept of 'hard' when applied to diamond, which is the hardest known natural material and therefore cannot be scratched by other objects.

Peirce used the idea of 'force' as a further argument that the meaning of a term, proposition or idea lies in understanding its effects. He believed that it was a self-contradiction to say, as was argued at the time, that we understand the effect of force but do not understand what force actually is. But for Peirce, when we understand what effects are associated with force, then we understand what force is. He pointed that:

> The idea that the word force excites in our minds has no other function than to affect our actions, and these actions can have no reference to force otherwise than through its effects (5:404).

A definition of the term, as Leibnitz might provide, is a helpful starting point but it does not enable us to fully understand what force is. It is mainly through understanding the practical consequents that will enable us to develop a clear and full understanding of the idea of force.

This can be applied to other concepts, including for example, to the term 'learning'. Referring again to the dictionary definition, learning is 'The acquisition of knowledge or skills through study, experience, or being taught' (Soanes and Stevenson 2005, 996). If we were to remain with this definition in order to understand what learning means, then it would require explaining all the terms used in the definition, such as for example, 'acquisition', 'knowledge', 'skills' and so on. This would involve the endless process of one word being defined in terms of others and those in turn would then require a definition using other terms … ad infinitum. This is referred to as the regression problem and philosophers look upon this as being an obstacle to understanding.

The most helpful way of considering what learning is, therefore, would be through understanding the *practical* characteristics and consequents of learning. One way of doing this would be through the use of the phrase 'for example'. This would draw on a number of explicit and practical examples that demonstrate what learning is. It would involve an understanding of the observable characteristics and their associated effects, when learning had occurred. For example, this might be the acquisition of a skill such as learning to ride a bicycle or demonstrating knowledge through writing an essay or persuasively arguing a point.

In addition, Peirce argued that our understanding of a concept is derived from thinking that draws on the scientific method and is grounded in logical, inferential reasoning. The aim, according to Peirce, 'is to find out, from the consideration of

what we already know, something else which we do not know' (5:365). In order to achieve this new knowledge, Peirce drew on a number of ideas that resulted directly from his pragmatic maxim. The aim was to be able to attain a higher level of clarity in our conceptual understanding, compared to previous times. This higher level of clarity would free our thinking from the past inadequacies of the 'circle-squarers, metaphysicians [and] astrologers, and what not' (5:393).

Peirce believed that laying the foundations of being able to think clearly was the very first lesson that logic should be able to teach us and the way to achieve this was through his pragmatic maxim, that linked action and thought.

Belief and Habit

The link between action and thought can be understood further in Peirce's ideas about *belief* and *habit*. A belief is a way of thinking, a perspective on the world that determines our habits and therefore influences the way we behave. Peirce argued that a belief establishes a habit that he sometimes referred to as a rule of action and at other times a rule *for* action. Whichever term appears the more appropriate, it is a rule that determines our behaviour in particular circumstances and contexts.

A belief can be relatively straightforward or it can draw on a wealth of ideas and values that we develop as a result of our experiences. In this way, our experiences inform and determine a range of behaviours in particular situations. Another way of putting this is to state that the consequents of ideas are tangible and practical outcomes that are 'sensible', i.e. that are empirically observable. This relationship can be illustrated diagrammatically, as shown in Fig. 2.1.

So, experience is the basis of a belief that is made up of ideas and values. A belief produces a habit, which is a rule, something that we rely on to guide us through our thinking and which in turn, therefore, leads to action.

It will not be too difficult to apply this relatively simple formula to your own behaviour or actions that you can recall taking place. A simple example is when I reflect on my supervision of post-graduate theses. I have developed the belief that it is essential that a clear, logical structure for the thesis is agreed as soon as possible at the start of a candidate's programme. Part of my belief is that this provides a compass through the difficult and challenging tasks that are undertaken in order to present the research on which the thesis is based. The habits I have developed are

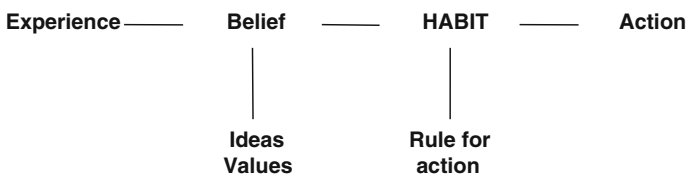

Fig. 2.1 Experience and action

easily identified through my supervision activities. Not surprisingly, they lead me to encouraging candidates to determine the structure of the thesis early in their research programme. In addition, given that it is post-graduate level, I will tend to provide guidance and suggestions about what the structure *might* be rather than dictate what it *should* be.

My reflections demonstrate that a habit provides us with regularities about what to think and do in a particular situation. It leads to predictability and relatively increased certainty about the future. Without such predictability we would have to treat all experiences as new and unknown. There would be no generalising from one event to the next. That is not to say that the process is rigid and not open to amendment. In the example of a research thesis, the structure may change, of course, once the empirical data collection and analysis have been completed.

Peirce also argued that we know when two beliefs are different because they lead to different actions. He explained this more fully when he stated:

> Thus, we come down to what is tangible and conceivably practical, as the root of every real distinction of thought, no matter how subtile (*sic*) it may be; and there is no distinction of meaning so fine as to consist in anything but a possible difference of practice (5:400).

In other words, again, our experiences are the basis of our ideas and our beliefs. These create the habits of mind, the rules for action, that we all possess and use to develop an understanding of everyday life as well as the more complex and sophisticated ideas of, for example, academic study or scientific endeavour. That understanding is demonstrated through our actions and our behaviour. It can also be expressed in what we think, say and write which, in turn, lead to actions and activities. For example, my belief in, say, a transformational style of leading a team of academic tutors will lead to a different repertoire of behaviours compared to someone whose beliefs are based on a more transactional approach to leadership.

Drawing on another example, I may say that I believe that student-centred learning is an important pedagogical strategy. My teaching and classroom management, therefore, will include extensive group work that draws on students' experiences of the topic we are studying. Classroom activities will include a heavy emphasis on encouraging students to share their previous experiences of the issues that the topic raises. The habit of mind, or rules for action, I have developed over a period of time informs my approach to my theory of teaching and learning, which in turn leads me to behave in a certain way. Further, I have no doubt that such an approach enables effective student learning.

My understanding of the meaning of the term 'student-centred learning' will be shown, therefore, through awareness of the debates around the concept of pedagogy. This will also include an abstract definition, or explanation of the term. But remember, according to Peirce, this will be inadequate to demonstrate that I fully understand what 'student-centred learning' means. However, drawing on Peirce's pragmatic maxim, I can demonstrate my understanding through the observable practicalities of the support I provide for students, not only in the classroom but also, for example, in the library or using social media and email.

Belief and Disposition

Peirce further argued that a belief is an enduring condition that can become well established over a period of time, and on to which we tend to cling tenaciously. As a result, it produces a *disposition* to behave in a certain manner when an occasion or situation arises where the behaviour would be relevant and appropriate. This makes it clear that a firmly held belief does not necessarily make us act at once but only when we experience a situation where that belief is needed in order to enable us to make a decision about what to do.

For example, my belief about a student-centred pedagogy will only be relevant when I am discussing learning and teaching or when I am in a situation where I need to make a decision about my teaching. Outside of these situations it is unlikely that I will even think about the use of teaching and learning strategies. I will certainly not act on my belief, until and unless the occasion arises when I need to make a decision.

So, a disposition *may* lead to an action or behaviour *in the future if the conditions are appropriate*. In fact, Peirce argued that all propositions refer to the future and one of the significant characteristics of pragmatism is its focus on *consequents*, rather than *precedents*, in order to explain the meaning of a concept, idea or statement.

Belief and Doubt

So, belief can give rise to habits that are rules that, in appropriate circumstances, may lead to particular behaviour or actions. But what if we have a *doubt* about something? Or what if I find myself in a situation where I have a choice between alternatives? For example, what if I doubt that a student-centred approach to learning is not an appropriate strategy? Or I doubt that a transformational leadership style is not as adequate nor as effective as a transactional style? Imagine being in a situation where you have to base a decision on two or more alternatives. You may be unsure about which course of action to take. So, on this occasion you hesitate. According to Peirce, you are, therefore, in a state of *doubt*.

The contrast between belief and doubt is a further element of Peirce's pragmatism. He believed that we find doubt irritating, so we attempt to resolve the doubt so it leads to belief. Doubt is the incentive or motive for thought. In 'The Fixation of Belief', Peirce argued that there are three differences between belief and doubt.

First Difference

The first, perhaps rather obvious difference is that belief and doubt are not the same and therefore we are aware of when we are in a state of doubt compared to when we are in a state of belief. Peirce argued that:

> We generally know when we wish to ask a question and when we wish to pronounce a judgement, for there is a dissimilarity between the sensation of doubting and that of believing (5:370).

For example, I may wonder if devolving responsibility for a curriculum initiative within my department or team is a good idea. I am uncertain if there is someone with the experience and interest to take the initiative forward. However, it is essential that the new curriculum gets off the ground, so I discuss the way forward with my colleagues. I make enquiries about who might be a suitable person to take responsibility for the initiative. Eventually, I am able to identify someone who, I feel, will successfully manage the innovation.

I started with a doubt, or a question, about team members. Subsequently, that doubt turned into belief, based on my experience of inquiring into who might be suitable to take on the additional responsibility.

So, doubt is the start of the questioning or inquiry process and belief is the outcome of answering the question or coming to a conclusion as a result of the inquiry. As a result of this experience, it will be clear to me that the two processes, or states of mind, are very different.

Second Difference

The second difference between belief and doubt is a *practical* difference. Since 'Our beliefs guide our desires and shape our actions' (5:371) this should come as no surprise. Here we see another important and significant idea in the pragmatic maxim. Peirce argued that a belief 'is a more or less sure indication of there being established in our nature some habit which will determine our actions. Doubt never had such an effect' (5:371).

Put simply, on the one hand, a belief leads to a habit, which in turn determines our actions or behaviour. On the other hand, doubt leads only to an *attempt at resolution* that results in a change in a belief and not to an action or behaviour. It is the changed belief that subsequently leads to the changed action. This is represented in Fig. 2.2.

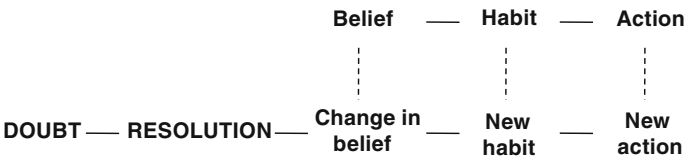

Fig. 2.2 Belief and doubt: practical difference

Third Difference

The third difference between doubt and belief identifies the contrasting *feelings* experienced when we have a doubt or when we have a belief. Peirce argued that:

> Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief; while the latter is a calm and satisfactory state which we do not wish to avoid, or to change to a belief in anything else. On the contrary, we cling tenaciously, not merely to believing, but to believing just what we do believe' (5:372).

The feelings associated with a belief are far more comfortable and indeed more comforting than the feelings that have been generated by a doubt. So much so, that we hang on to our beliefs because they will have served us well in the past and, once established, are integrated into our cognitive and behavioural repertoires. They enable us to understand the world around us and cope with its characteristics and its challenges. They make us feel comfortable due to producing a cognitive state that is relatively calm and satisfactory. However, in contrast, a doubt gives rise to a state that is uncomfortable and one that we endeavour to change into a state of belief. When this occurs, our actions are aimed at removing the doubt and 'settling a belief'.

Settling a Belief

It is worth reflecting a moment on the title of Peirce's essay, 'The fixation of belief', referred to earlier on page 13. The term 'fixation' refers, on the one hand, to the process of arriving at a belief. Either someone's beliefs are still developing but are not yet finalised, or *have* been finalised but now appear to be changing. Due to the uncertainty in both these situations there is a need, therefore, to 'fix' the belief. On the other hand, 'fixation' also refers to the outcome of a belief having being finalised or settled. The belief has already been fixed.

So, the aim of fixing a belief is the resolution of doubt through the 'settlement of opinion'. According to Peirce, opinion is settled and thus belief is fixed through the process of inquiry. The next chapter examines this element of Peirce's pragmatism in more detail. For the moment, however, it is worth pointing out that the term 'belief' is regularly the focus of epistemological arguments and is usually

associated with, and sometimes contrasted with, the idea of 'truth'. In other words, because we believe something, it does not necessarily follow that it is true. For example, I may believe that I am a genius, but regrettably it may not be true. The phrase 'justified true belief' is used to describe a belief that has been justified, or warranted, as being true.

For Peirce, however, knowledge is always provisional, due partly to our fallibility as human beings, as well as the sheer amount of knowledge and understanding that we simply cannot access in one lifetime. Therefore, 'The most that can be maintained is, that we seek for a belief that we shall *think* is true' (5:375).

Next

The ideas briefly discussed in this chapter provide the groundwork for Peirce's more complex and sophisticated theories that underlie his pragmatist philosophy. It is impossible for any book to encompass all of his ideas and all of his writings. Inevitably, therefore, the focus of the remaining chapters is highly selective and will look at Peirce's:

(1) three kinds of inferential reasoning;
(2) inferential reasoning applied to his method of inquiry;
(3) semiotics or theory of signs;
(4) ontological categories.

Summary

This chapter has briefly outlined Peirce's pragmatic maxim as the basis of the philosophical ideas that he developed over a period of more than 30 years. Pragmatism offers a logical method of inquiry that aims to arrive at an understanding of a concept, statement or proposition in terms of its practical outcomes or effects.

It initially grew out of the rejection of both rationalism and empiricism. For Peirce, our understanding derives from the clearness of thinking using a scientific method and is grounded in logical, inferential reasoning based on the resolution of a doubt to arrive at a belief. Once established, a belief, which is derived from experience, enables the establishment of a habit, a way of thinking. A habit acts as a rule for action and therefore influences, if not determines, our behaviour.

Peirce made a distinction between belief and doubt, where doubt is the start of the questioning or inquiry process and belief is the outcome of answering a question or coming to a conclusion as a result of the inquiry. However, any conclusion or

subsequent belief can only be provisional, due partly to our fallibility as human beings, as well as the amount of knowledge that we simply cannot access in our own lifetime. Therefore, the most we can claim about our beliefs is that we think they are true.

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