Chapter 7
Environmental Interpretation

Michal Medek

7.1 Roots of Interpretation

> *While a guide on Long's Peak I developed what may be called the poetic interpretation of the facts of nature. Scientific names in a dead language together with classifications that dulled interest were ever received, as they should have been, with indifference and lack of enthusiasm by those who did not know. Hence, I began to state information about most things in the form of its manners and customs, its neighbours and its biography.*

wrote Enos Mills (1920) while describing his work with children in what he called a 'Trail School' at the turn of the nineteenth and twentieth century. The practice of the Trail School, education driven by children's interest in the outdoors, reminds us of many subsequent outdoor education methods such as Joseph Cornell's flow education (Cornell, 1998) as well as Mill's contemporaries' educational practice within the Nature Study movement. Marta Brunelli (2013: 402) finds the roots of environmental interpretation in the context of the 'cult of naturalism' of the nineteenth century that created the demand for education as a part of environmental tourism, as well as in the progressive education movement of the second half of the nineteenth century with its hands-on approach, namely the Nature Study. Nature Study refrains from classifications and comprehension through theoretical constructions, but puts the direct experience of the learner first, as its keen proponent, Liberty H. Bailey, explains:

> *The first essential in nature study is actually to see the thing or the phenomenon. It is positive, direct, discriminating, accurate observation. The second essential is to understand*

M. Medek (✉)
Faculty of Social Studies, Department of Environmental Studies, Masaryk University, Brno, Czech Republic

Czech Institute for Heritage Interpretation, Tišnov, Czech Republic
e-mail: michal@medek.us

© The Author(s), under exclusive license to Springer Nature Switzerland AG 2023

J. Činčera et al. (eds.), *Outdoor Environmental Education in the Contemporary World*, International Explorations in Outdoor and Environmental Education 12,
https://doi.org/10.1007/978-3-031-29257-6_7

> *why the thing is so, or what it means. The third essential is the desire to know more, and this comes of itself and thereby is unlike much other effort of the schoolroom. The final result should be the development of a keen personal interest in every natural object and phenomenon.* (Brunelli, 2013: 413)

Educational efforts within the US National Park Service in the 1920s and 1930s show the pursuit of distinctive educational methods and forms for national parks that are often referred to as 'field laboratories' or 'out of doors classrooms'. This illustrates that the main scope of the programs was field science delivered to both schools and 'lay visitors'. Although the NPS's chief educational officers understood that the educational principles of Nature Study must be employed in the programs, they searched for more robust methodological background:

> *There is hope that new methods in adult education will be discovered, and that the national parks will become the great universities of the out-of-doors for which their superlative scientific exhibits so finely equip them.* (Bryant & Atwood, 1932: 8)

The word "interpretation" started to be widely used for educational activities by the National Park Service in the late 1930s (Beck & Cable, 2002: 5). Freeman Tilden is praised for laying the longed-for methodological foundations for interpretation (Ludwig, 2003: 8). Before examining more closely Tilden's contribution, we must note that guided tours of nature were the major educational method practiced both at the times of Tilden and Mills (Fig. 7.1).

Fig. 7.1 Excursion with a ranger. (Photo: Jakub Pejcal)

7.2 Tilden's Principles

In 1955, a journalist Freeman Tilden was commissioned by the US National Park Service to

> *get beneath the surface of method and procedure to the underlying principles – to the art and philosophy that should guide efforts to interpret the great scenic and historical heritage of America to her citizens.* (Craig in Tilden, 2007: 9)

After extensive travel and his own educational experiments, Tilden in 1957 published six principles, as (in his own words), a philosophy upon which interpretation as an educational activity can be based. The principles are as follows:

1. Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile.
2. Information, as such, is not interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information.
3. Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical or architectural. Any art is in some degree teachable.
4. The chief aim of Interpretation is not instruction, but provocation.
5. Interpretation should aim to present a whole rather than a part, and must address itself to the whole man rather than any phase.
6. Interpretation addressed to children (say up to the age of twelve) should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program.

Unlike his predecessors, Tilden freed himself from the idea of studying natural assets in the unique outdoor environment of national parks. He saw interpretation as

> *an educational activity that aims to reveal* ***meanings and relationships*** *through the use of original objects, by first-hand experience, and by illustrative media.* (Tilden, 2007: 33)

He based the method on the constructivist approach and clearly saw that mental processes need to be initiated within a participant. Thus, the aim of the educational encounter for Tilden is stimulation to widen horizons and interest, not transfer of facts.

Though not being a naturalist, historian, educator, or psychologist, Tilden used observation and experiments to distill key principles of learning in an informal setting (or communication in general): The program must be perceived as relevant and should support the personal meaning-making process within each participant. Participants should be actively involved, ideally both mentally and physically. Starting from the real phenomena a person can experience first-hand, the program should point to a larger picture or '*deeper truths that lie behind any statements of fact*', i.e., a generalized idea, which a participant can not only take back home, but which is internalized and keeps him/her connected with the phenomena long after the program experience (Tilden, 2007: 59).

By mentioning the age of 12, Tilden noted that this method is relevant for adults and children with fully developed abstract thinking, what his contemporary Jean Piaget (1972) called the formal operational stage of cognitive development.

7.3 Environmental Interpretation

Based on the principles formulated by Tilden, interpreters were trained not only in the National Park Service, but also in zoos, memory institutions, and other natural and cultural heritage sites. The field spread to other countries, particularly in the English-speaking world (Merriman & Brochu, 2006).

Strong emphasis on environmental education aspect of interpretive programs can be seen in the 1970s. Freeman Tilden advocated for using the unique channel of the National Park Service toward adults for environmental education of this target group (Craig in Tilden, 2007: 11), Grant William Sharpe (1976) published Interpreting the Environment, and Don Aldridge, a key figure of heritage interpretation in the UK, defined the interpretation as:

> *the art of explaining the significance of a place to the public who visit it in order to point out a conservation message.* (Aldridge, 1975)

In 1980 William Lewis enriched the methodological toolbox of thematic interpretation (Lewis, 2014) that was further elaborated by psychologist Sam Ham in the influential monography Environmental Interpretation (1992).

7.4 Thematic Approach

The thematic approach is based on theory of communication which shows that if we clearly state a theme of a program (i.e. a single whole idea we want to communicate) and build the program around it, the audience will comprehend much better (Ham, 1992). Although both Ham and Lewis suggest the thematic approach for oral and written presentations, the concept began to be used in all forms of interpretive programs. Today it is even applied in the field of interpretive planning (Brochu, 2014: 106), which is a methodology for developing interpretive programs and communication strategies at levels ranging from a single program or an exhibition up to a whole national park.

Sam Ham (2013: 14) defines four qualities that interpretive programs should have in order to be successful, i.e., to maintain attention as long as the recipient understands the message, which is presented in a convincing way.

1. Interpretation has a theme. (T)
2. Interpretation is organized. (O)

3. Interpretation is relevant. (R)
4. Interpretation is enjoyable. (E)

Ham calls this the TORE model and further elaborates on each part of it.

In order to excite a participant, the **theme** should be strong. This means provoking the audience to think, attract attention, creating intrigue, making participants curious (Ham, 2013: 122). The process of theme development became fundamental for the construction of interpretive programs (see Ludwig, 2015; Kohl, 2018).

'Interpretation is **organized** when it's presented in the way that is easy to follow' (Ham, 2013: 26). The key to remembering new information is the individual's ability to create a meaningful unit from it that can relate to information stored in long-term memory (Revlin, 2012: 123). This is translated into interpretive programs by structuring them hierarchically along themes and underpinning subthemes. The number of subthemes is limited to a maximum of four based on the findings of memory experiments by Cowan (2001). This allows a participant to be oriented in the structure of the program, which leads to an improved learning process in the given informal environment.

Relevant interpretation is meaningful, that is, comprehensible or resonant with the knowledge of a program participant. It should also be personal using the above-mentioned Tilden principles. Due to the diversity of program participants and their diverse levels of knowledge, the interpretation often uses so-called universal concepts, topics shared by all people, such as love, fear, death, courage, friendship, etc. (Brochu & Merriman, 2015).

Interpret Europe (2017: 14) points out that universal concepts, which lead to individual meaning-making process, are closely related to mental frames that trigger individual system of values. Thus, proper framing of messages (usually delivered through stories) of an interpretive program not only makes the first-hand experience relevant to a participant, but it can also promote values associated with environmental-friendly behavior, Universalism in particular.

> *Universalism values derive from survival needs of individuals and groups. But people do not recognize these needs until they encounter others beyond the extended primary group and until they become aware of the scarcity of natural resources. People may then realize that failure to accept others who are different and treat them justly will lead to life-threatening strife. They may also realize that failure to protect the natural environment will lead to the destruction of the resources on which life depends.* (Schwartz, 2012: 7)

An **enjoyable** experience does not mean that the program must be entertaining, but that it provides an experience that is considered reasonable and/or in line with expectations. This can also mean arousing emotions such as sadness or humility.

7.5 Program Development

Interpretive planning is the process of program development. Since it often deals with multiple programs and communication strategies (e.g., at a national park level), some of the planning models are robust and comprehensive. Despite of the fact, the

models (Carter, 2001; Van Matre, 2009; Brochu, 2014; Stergioti et al., 2021) share many similarities that can be generalized as follows.

1. The planning process starts with the review phase:
    1.1 Looking at **the place** (or heritage in general), its characteristics, processes that shaped it and phenomena that can be experienced by program participants, what activities are endangering the heritage, what conservation measures are in place.
    1.2 Analyzing who the (potential) **participants** are, what their interests are likely to be, and how they may perceive the site (or heritage in general).
    1.3 Reviewing the content and quality of **current interpretive programs** (often including infrastructure that influences the experience of people with the phenomena).
2. In the development phase, the process looks at:
    2.1 **Aims** of the program: What change should it deliver within given target group(s).
    2.2 Program **content** – theme development, first-hand experiences facilitation, provoking meaning-making and participation, etc.
    2.3 Program **form** – which media and aids best suit to deliver the content in order to achieve program aims.
    2.4 How will the program be **implemented and sustained** and how we find out it works, i.e. achieves its aims.

Specific to program development in the field of environmental interpretation is the that the form is decided in the later stages of the work only after the target group has been understood, and a clear direction about the content and aims of the program have been decided (Brochu, 2014: 69). Unlike other methods, environmental interpretation (a) intends to connect a person with the very place through first-hand experience, (b) may aspire to reach lots of people simultaneously, often across a large space, and (c) interpretive projects may be endowed with generous funding. Thus, it may appear during the planning process that a self-guided program using a leaflet or an app in a handheld device serves the purpose of the program better than a guided walk or a panel (Fig. 7.3) and that is why the decision on so called 'interpretive media' comes later in the development phase. Figure 7.2 shows an outline of an interpretive program developed in accordance with the principles of thematic interpretation.

7.6 Criticism

The mainstream thematic approach in interpretive programs also has its critics. Van Matre (2009) points out that individual experience with a place or phenomenon should be the focal point of interpretive programs, not the personal deeper truths or elaborated theme structure. He is also critical of the jargon used within the field, for

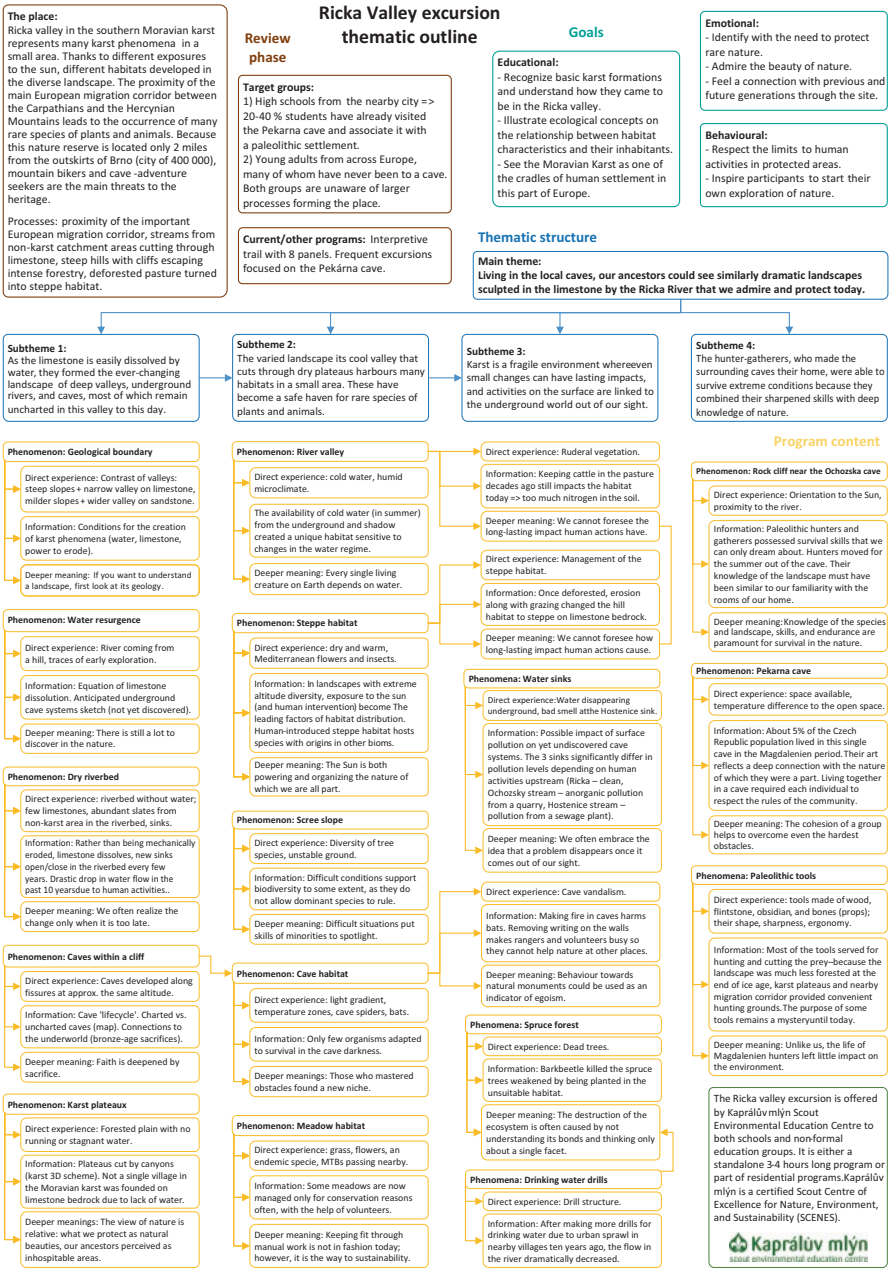

Fig. 7.2 Ricka Valley excursion thematic outline

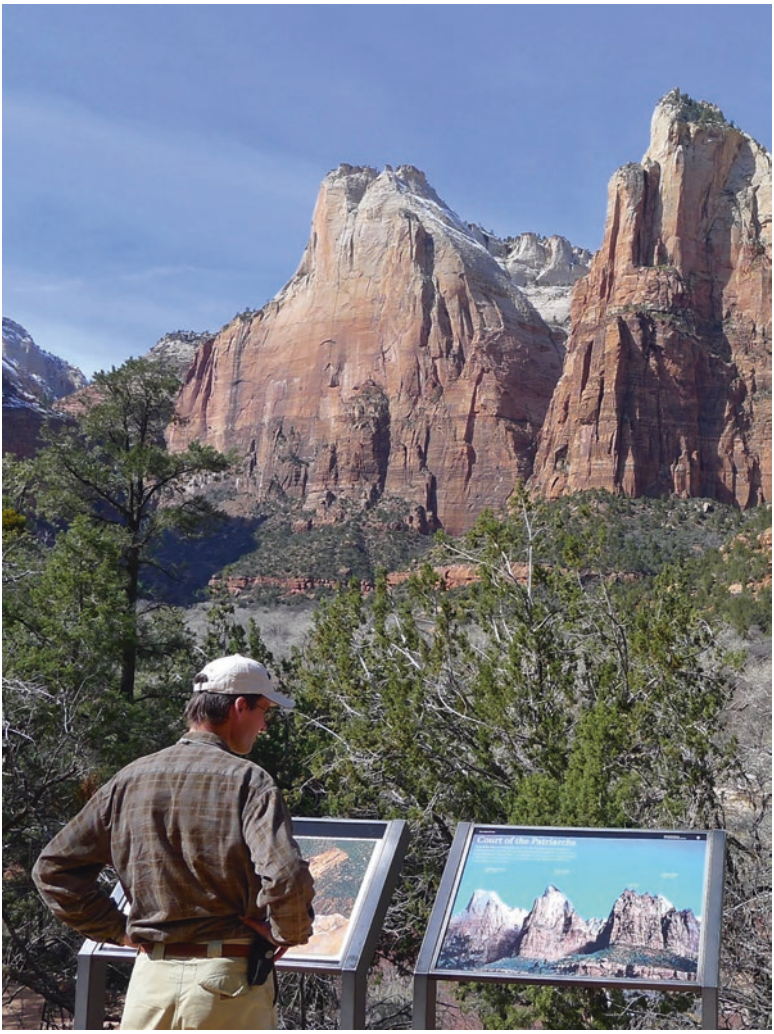

Fig. 7.3 Interpretive panels – example of a non-personal interpretive program. (Photo: Michal Medek)

example, referring to natural assets as 'resources' (Van Matre, 2009: 34). This linguistic view is also shared by Interpret Europe (Stergioti et al., 2021), which puts emphasis on individual meaning-making, participation, and promoting those values leading to humanity and sustainability in the planning process. Heritage is in Interpret Europe perceived as a shared treasure with the locals being largely its authentic stewards, unlike program development experts parachuted to the site or conservation institutions governed from far away.

A skeptical view on the institution-driven planning process is also shared by Jan Kohl and Stephen McCool (2016), who argue for a more holistic approach in the world that is not predictable, linear, understandable, or stable.

In general, all the above-mentioned authors call for a less mechanical approach to program development in environmental interpretation, i.e., putting the individual experience of the site on a pedestal, avoiding repeating similar patterns across different sites and developing programs presenting not only the viewpoint of a contract owner.

7.7 Discourse

There are many topics resonating through the field of environmental interpretation. We pick up some of the current discourse:

We have already mentioned **participation** both in the phase of program development and program execution. The European professional organization Interpret Europe puts particular emphasis on this aspect. One of the four key qualities of interpretation in its triangle model (Ludwig, 2015) is 'Provoking resonance and participation' which is translated to the interpretive planning process as involving a wide range of stakeholders. They 'include all organisations or individuals, residents or visitors that have an interest in the site, affect the site, or are affected by the site.' (Stergioti et al., 2021) This broad definition reaches beyond the term heritage community (Council of Europe, 2005) and enables, namely, the local inhabitants to both have a say in how the programs are assembled as well as play a role in them.

Long before **authenticity** became a merchandising tool (Gilmore & Pine, 2007) Freeman Tilden noted that the contact with the original (be it wilderness or a pueblo of native Americans) is the very essence of the interpretive encounter. He also emphasized the authenticity of the interpreter as a priceless ingredient in any program (Tilden, 2007: 130). Since interpretation programs mostly happen in free time within the framework of a tourist experience, they cannot escape the debate initiated by MacCannell (1973) in the field of tourism and continued by Jean Beaudrillard (1981) regarding the authenticity of human experiences. Since authenticity is not an objective quality but a projection of an individual's ideas, it needs to be constantly negotiated and leads the debate to several dimensions. Let us name just a few: (1) Negotiation of authenticity within interpretive program, e.g., shall participants learn that what we protect today as a primaeval forest was a deforested area several centuries ago? How much shall the program meet participants' expectations of authenticity that are mental cultural constructs often not based on the realities of the place? (2) The impact of human actions on heritage including the observer effect – the change that occurs from the mere fact of observing the thing. Typical examples are programs in wilderness areas impacting the very essence of the wilderness as well

as the perception of other visitors. (3) Meddling with natural or cultural heritage in order to conserve its state with inevitable impact on perception of authenticity. For example, slowing erosion forces that sculpted rock monuments but inevitably lead to their destruction.

Because the concept of authenticity is at the heart of the method of environmental interpretation while also being 'an elusive concept that lacks a set of central identifying criteria, lacks a standard definition, varies in meaning from place to place, and has varying levels of acceptance by groups within society' (Prideaux et al., 2013: 6) the debate is far from over.

The ambiguous contribution of **new technologies** has been among hotly debated topics. On one hand, the technologies open new horizons in possibilities for environmental interpretation, on the other hand there is the danger the experience here and now is substituted with interactions with a device (Beck & Cable, 2011: 81). Činčera et al. (2018) suggest that the debate is actually of ontological nature. Romanticists feel the human experience in nature should follow the principles of (natural) simplicity and point out that gadgets do not enhance the experiences of contacts with elements for good (idea coined already in the 1940s by Aldo Leopold, 1949: 166). Relativists do not label technologies as good or evil and suggest to study benefits or negative effects of each individual use of them. The important thing is not to forget the mission of an interpretive program and avoid swimming with a tide of inflated expectations that the adoption of new technologies brings about (Gartner's Hype Cycle).

Dealing with tablets in an interpretive program at Pacific Grove Monarch Butterfly Sanctuary can be considered an example of a good practice. In order to widen the experience of seeing the butterflies, the Pacific Grove Museum of Natural History connected tablets to spotting scopes enabling more participants to see the butterflies on larger screens. However, it appeared that for three to fifth graders the screens detached children from the on-site experience as they thought they were merely looking at pre-recorded digital content. Older students could better understand the connection of the on-screen content with the site. For younger participants the benefit of avoiding troubles of manipulation with the spotting scopes enhanced their experience, notwithstanding, they were less skeptical about what they see on screen (Stong, 2019). It seems that the lecturers in this case took to heart the advice on distinguishing meaningful employment of new technologies to interpretive programs:

> *If one draws attention away from the resource (sic) to a screen, when visitors return their gaze to their immediate surroundings, they should be able to discern more, appreciate more, question more, enjoy more.* (Hristov et al., 2019)

7.8 Conclusion

From its empirical beginning under the auspices of the US National Park Service, environmental interpretation developed into a distinctive field with numerous professional training courses, university studies, and a research journal.

Environmental interpretation is anchored in informal education focusing on experiential learning during free time activities like visits to national parks or hiking. Interpretive programs are delivered in various forms, ranging from guided tours to interpretive panels or exhibitions at visitor centers, attempting to reach the widest possible audience. This might be why the largest professional organization refers to it as 'purposeful approach to communication' (National Association for Interpretation, 2021) shifting from the classical framework of 'educational activity'.

The common ground between the programs is that they are place (heritage) centered, which puts emphasis on experiential learning through individual first-hand experience, thus attempting to trigger meaning-making process with the ultimate goal of protection and fostering stewardship.

Program development is based on the interpretive planning process that ideally follows one of the planning methods. Most of them use the thematic approach of program design.

The methodological approach used in environmental interpretation employs learning and communication theories in order to reach the widest audience mostly in non-educational settings. It's sophisticated work with emotional aspects of programs in order to turn natural (and cultural) phenomena into experiences and make them relevant to all people so that it seems to be a valuable and inspiring contribution to the field of outdoor environmental education.

References

Aldridge, D. (1975). *Guide to countryside interpretation*. HMSO for Countryside Comission and Countryside Comission for Scotland.

Beaudrillard, J. (1981). *Simulacres et simulation*. Galilée.

Beck, L., & Cable, T. (2002). *Interpretation for the 21st century*. Sagamore publishing.

Beck, L., & Cable, T. (2011). *Gifts of interpretation. Fifteen guiding principles for interpreting nature and culture*. Sagamore.

Brochu, L. (2014). *Interpretive planning*. National Association for Interpretation.

Brochu, L., & Merriman, T. (2015). *Personal interpretation, connecting your audience to heritage resources*. National Association for Interpretation.

Brunelli, M. (2013). From nature guiding to nature interpretation in the United States (1872–1920). The origins of the professional practice of heritage interpretation: between protection and education. *History of Education & Children's Literature, VIII*(1), 399–428.

Bryant, H. C., & Atwwod, W. W., Jr. (1932). *Research and education in the National Parks*. US Government Printing Office.

Carter, J. (Ed.). (2001). *A sense of place – An interpretive planning handbook*. Tourism and the Environment Initiative.

Činčera, J., Medek, M., & Lupač, M. (2018). *Příroda 2.0. Využití digitálních médií pro terénní interpretaci přírodního dědictví*. Masarykova univerzita.

Cornell, J. (1998). *Sharing nature with children*. DAWN Publications.

Council of Europe. (2005). *Framework convention on the value of cultural heritage for society*. Council of Europe.

Cowan, N. (2001). The magical number 4 in short-term memory: A reconsideration of mental storage capacity. *The Behavioral and Brain Sciences, 24*(1), 87–114.

Gilmore, J., & Pine, J. (2007). *Authenticity: What consumers really want?* Harvard Business School Press.

Ham, S. H. (1992). *Environmental interpretation: A practical guide for people with big ideas and small budgets*. Fulcrum Publishing.
Ham, S. H. (2013). *Interpretation – Making a difference on purpose*. Fulcrum Publishing.
Hristov, N., Strohecker, K., Allen, L., & Merson, M. (2019). Talking visuals in a digital age. *Legacy, 30*(5), 32–35.
Interpret Europe. (2017). *Engaging citizens with Europe's cultural heritage*. Interpret Europe.
Kohl, J. (2018). *Interpretive theme writer's field guide: How to write a strong theme from big idea to presentation*. InterpPress.
Kohl, J. M., & McCool, S. F. (2016). *The future has other plans: Planning holistically to conserve natural and cultural heritage*. Fulcrum Publishing.
Leopold, A. (1949). *Sand County Almanac*. Oxford University Press.
Lewis, W. J. (2014). *Interpreting for park visitors* (12th ed.). Eastern National.
Ludwig, T. (2003). *Basic interpretive skills. The course manual*. Bildungswerk Interpretation.
Ludwig, T. (2015). *The interpretive guide: Sharing heritage with people* (2nd ed.). Bildungswerk Interpretation.
MacCannell, D. (1973). Staged authenticity: Arrangements of social space in tourist settings. *American Journal of Sociology, 79*(3), 589–603.
Merriman, T., & Brochu, L. (2006). *The history of heritage interpretation in the United States*. InterpPress.
Mills, E. A. (1920). *The adventures of a nature guide*. Doubleday, Page & Company.
National Association for Interpretation. (2021). *What is interpretation* [online]. Available from https://www.interpnet.com/nai/interp/About/What_is_Interpretation_/nai/_About/what_is_interp.aspx?hkey=b5ddeff3-03a8-4000-bf73-433c37c8a7af. May 2022.
Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human Development, 15*, 1–12.
Prideaux, B., Timothy, D., & Chon, K. (2013). *Cultural and heritage tourism in Asia and the Pacific*. Routledge.
Revlin, R. (2012). *Cognition: Theory and practice*. Worth Publishers.
Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, 2(1) [online]. https://doi.org/10.9707/2307-0919.1116 May 2022.
Sharpe, G. W. (Ed.). (1976). *Interpreting the environment*. Wiley.
Stergioti, V., et al. (2021). *Interpret Europe Certified Interpretive Planner (CIP) training and certification plan, October 2021*. Unpublished document. Interpret Europe.
Stong, N. (2019). To digiscope… or not to digiscope? *Legacy, 30*(5), 9–11.
Tilden, F. (2007). *Interpreting our heritage* (4th ed.). The University of North Carolina Press.
Van Matre, S. (2009). *Interpretive design and the dance of experience*. The Institute for Earth Education.