Adequate and Appropriate Methodology

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Introduction

ASCA's *Standards of Professional Practice*, or SPP (2011), defines arboricultural consulting as a "profession which involves the application of technical knowledge, analytical skills and professional judgment to arboricultural-related facts and circumstances." In the course of their work, Consulting Arborists carry out a wide range of arboricultural investigations using various investigative and analytical tools (i.e., methods).

Methodology and method are not synonymous. In an ASCA context, methodology can be understood as a broad umbrella that encompasses the various particular methods, practices, and techniques that Consulting Arborists might employ. For example, Merriam Webster (2015a) defines methodology as "a body of methods, rules, and postulates employed by a discipline." Wikipedia (2015) suggests that "methodology offers the theoretical underpinning for understanding which method, set of methods, or so-called 'best practices' can be applied to specific case…"

In our experience, Consulting Arborists are sometimes criticized or even attacked—by attorneys, other experts, or other Consulting Arborists—as having violated an overall duty of care or a supposed professional practice standard of care if they do not select and apply some particular or "standard" method.

> Consulting Arborists have broad discretion to exercise professional judgment in selecting suitable methods… there is no duty to use any particular method.

Purpose

This article considers how Consulting Arborists properly select suitable methods. We use properly to mean in a manner that satisfies both an overall duty of care and more specific practice standards as established by the SPP.

This article concludes that the SPP gives Consulting Arborists broad discretion to exercise professional judgment in selecting suitable methods, and that there is no duty to use any particular or "standard" method.

Background

ASCA Standards of Professional Practice

The purpose of the SPP is to provide "guidance for members to govern their professional conduct" (ASCA 2007, 2011). The original ASCA Code of Ethics, written around the time that ASCA was founded in 1967, included seven brief articles or ethical principles. In practice, it was too vague to provide useful practice guidance or to be enforceable.

In 1995, ASCA decided to develop more specific standards of professional practice, suited to the evolving nature of arboricultural consulting (Cullen and Day 1996). ASCA commissioned author Scott Cullen to study the standards of other professional organizations and to draft a new ASCA standards document. Author Joe McNeil served on a new Standards of Professional Practice Committee, which molded the draft into the form of SPP that was adopted by ASCA membership in 1996. (Duke 1995, Palys 1996) In 2000, serving as SPP Committee chair, Joe worked with an ASCA task force to study and provide a recommendation regarding enforcement of the SPP (Young et al. 2000). Thus, as authors of this article, we are particularly familiar with the development and implementation of the SPP's provisions.

The ASCA board occasionally made minor revisions to the SPP up to 2007. In 2011, a new task force recommended simplifying the standards to their current form (ASCA 2011). Some of the supporting detail is now provided in the *Guide to a Professional Consulting Practice* (ASCA 2012).

Duty of Care and Standards of Care

In society, we all have a duty of care; that is, a legal obligation to act with reasonable diligence and skill in particular circumstances (Garner 2014, ISA 2014). Property owners, for example, have a duty of care to ensure a reasonable degree of safety for people or property near their trees (Dunster 2013, p. 11; Smiley et al. 2011, Table P1). Consulting Arborists similarly have a duty of care that requires them to act with reasonable diligence and skill. SPP describes

six ethical principles, including Competence, Due Care, Impartiality, Independence, Integrity, and Objectivity. An ASCA member's duty of care is embodied in Due Care:

> "Due care varies with each assignment, but may be generally defined as the level of care that would be required of a reasonably prudent professional under the same or similar circumstances" (ASCA 2011, §1.2).

The *Guide to a Professional Consulting Practice* (§11.2) notes that Due Care includes knowledge, thoroughness, and attentiveness. Due Care is defined by, and Consulting Arborists are guided by, Standards of Care (ASCA 2012, §11.2; ISA 2014, p. 153). The *Guide to a Professional Consulting Practice* notes that:

> "The standard of care is the ordinary and reasonable degree of care required of a prudent professional under the circumstances; it is what another Consulting Arborist would do under the same or similar circumstances…The standard of care can be a subjective issue upon which reasonable, competent professionals may disagree" §11.2).

Thus, there is not one single Standard of Care that applies either to all circumstances or in the same or similar circumstances. Due Care in the same or similar circumstances can be satisfied in different ways. Standards of Care may be established a) generally, by the reasonable actions of professionals in the same field under the same or similar circumstances, or b) more specifically, by published practice standards in the field. Some practice standards—such as those in ASCA's SPP—are developed by organizations for their members. Other practice standards—such as ANSI A300 (see, for example, TCIA 2011)—are developed for an entire industry. Standards of Care may also be informed by generally accepted methods and practices that are not, however, promulgated as standards. Examples include the *Guide for Plant Appraisal, 9th Ed.* (CTLA 2000), ISA's various *Best Management Practices* (see, for example, Smiley et al. 2011), and the *Tree Risk Assessment Manual* (Dunster 2013).

ASCA Methodology Practice Standard

What should guide a reasonably prudent Consulting Arborist in selecting methods in a manner that satisfies a Standard of Care? Certainly, reasonably prudent professionals are guided by their general knowledge, training, and experience, and their particular competence (see ASCA 2011, §1.1) within a field. The 1996 SPP was purposefully crafted to also provide a specific methodology practice standard for Consulting Arborists, who rely on their own professional judgment in selecting methods. The methodology practice standard remains clear in the current SPP:▪

> "Methodology. Members shall base conclusions, opinions and recommendations on adequate and appropriate methodology (analyses, investigations, tests and other procedures)" (ASCA 2011, §2.1(C), see also ASCA 2012, p. 23).

The key is in understanding what is adequate and appropriate. Consulting Arborists must generally look to the ordinary meaning of these terms since they are not defined in the current SPP or the *Guide to a Professional Consulting Practice*. Merriam-Webster defines adequate as "sufficient for a specific requirement" (2015b) and appropriate as "right or suited for some purpose or situation" (2015c). In an ASCA setting, the specific purpose or situation is defined in the assignment (see ASCA 2011, §2.1(A)). While the earlier SPP obviously no longer governs practice, we find that its consideration of assignments is still informative. For the benefit of readers who may not have it, we quote the relevant passages:

- **Adequate.** "Sufficient to allow the resolving of issue(s) and/or solving of problem(s) and/or answering of question(s) posed in an assignment to the level of thoroughness warranted by the definition of the assignment" (ASCA 2007, Definitions).

- **Appropriate.** "Fitting a particular set of facts and circumstances and fitting an assignment as defined" (ASCA 2007, Definitions).

The appropriate scope of methods will vary by assignment. For example, a brief visual inspection might be sufficient to inform a homeowner that a tree is dead, but extensive interviewing, sampling, and testing might be required to document for litigation purposes the facts that contributed to the tree's decline or death.

The selection of methods also depends on the Consulting Arborist's competency with and understanding of particular methods. The Consulting Arborist must be able to reliably use a method and credibly explain the method and the results obtained (ASCA 2012, p. 23). For example, an optical clinometer, a laser hypsometer, or even simpler methods might all be adequate to measure tree height in a particular situation. If the Consulting Arborist is only experienced with and able to explain the results obtained with one of them, however, only that method is appropriate for that Consulting Arborist in that case.

Thus, the Consulting Arborist relies on knowledge, training, and experience to exercise professional judgment and determine what method is adequate and appropriate in each assignment, based on the definition of that assignment as required by the SPP §2.1(A) (ASCA 2011).

Discussion

Prescriptive or Permissive ASCA Standards of Care?

In a recent article on tree appraisal (Cullen and McNeil 2015), we noted the tension between prescriptive and permissive application or interpretation of the guidance in the *Guide for Plant Appraisal*. It has never been promulgated as a standard, and, by its very nature, it is reasonable to consider it more permissive than a standard. Conversely, it might generally be reasonable to consider standards, by their very nature, to be more prescriptive. Even standards, however, are subject to interpretation. For example, whether the ANSI A300 Part 1 pruning standard (TCIA 2008) invariably prohibits tree topping can be vigorously argued to either conclusion.

As noted above, the ASCA SPP was crafted to be explicitly permissive with regard to methodology and to empower professional judgment in selecting adequate and appropriate methods. Consulting Arborists must understand that great personal responsibility goes hand-in-hand with that professional discretion. The *Guide to a Professional Consulting Practice* (§3.3) notes that "a consultant has complete responsibility for fulfilling assignments." In this context, a consultant has complete responsibility for the adequacy and appropriateness of the method selected and for competency in both applying and explaining it.

Competence

Competence is one of the six ethical principles described in the SPP. Consulting Arborists have a general duty to be competent in any assignment they undertake, or they must obtain competent assistance (ASCA 2011, §1.1(E)). Competence is more specifically required in any method employed. The *Guide to a Professional Consulting Practice* (§11.1) describes five levels of competency, from the Novice, whose "behavior [is] rule based…inflexible and limited," to the Expert, with "an intuitive understanding of the situation and the ability to focus on the pertinent issues." Thus, the level of discretion properly exercised in method selection is not the same for every Consulting Arborist.

Methods in Particular Practice Areas

Consulting Arborists work in a wide range of practice areas that involve a similarly wide range of disciplines and activities (see ASCA 2012, §1.2). Is the general SPP discretion in selecting methods more limited in particular practices areas? Do published methods and practices by their very existence exclude proper selection of other methods and practices? We will consider a few examples.

Forensic practice "involves application of science and standards to answer questions that would be of interest to a court of law" (ASCA 2012, §1.2(4)) or other legal proceeding. Some Consulting Arborists may believe that a forensic assignment must, by definition, require technologically sophisticated instruments or tests, or particular methods. In *Arboricultural Investigations, Forensics and the CSI Effect* (Cullen and McNeil 2012), we explained that forensic practice is defined by its application to legal matters and not by the methods employed. A forensic assignment does not necessarily require extensive or technologically sophisticated tests, and an assignment does not become a forensic one simply because such methods are selected. The adequate, appropriate, and competent tests still apply. *Black's Law Dictionary* (Garner 2014) defines adequate, simply, as "legally sufficient." Forensic practice may impose a higher level of adequacy because of precision or reliability requirements. To be legally sufficient, any judicial, legal, or regulatory requirements for particular methods would have to be met.

There are particular tests, or rules of evidence, in a litigation setting. In jurisdictions that apply the older Frye or "general acceptance" test, an expert can be limited to selecting generally accepted methods. In jurisdictions that apply the more recent Daubert test, the trial judge—as "gatekeeper"—may consider a number of factors, only one of which is general acceptance. Each of the factors "may or may not be pertinent." The Daubert test is more focused on relevance, reliability, and "trustworthiness" of methods than on general acceptance alone. (See, for example, Berger 2000, Federal Judicial Center 2004.) Consulting Arborists working in litigation should obtain current, qualified legal advice about the rules of evidence that will govern or influence the selection of methods.

Tree appraisal involves developing a monetary opinion about trees or other plants. The *Guide for Plant Appraisal* is a generally accepted reference in North America. Must a Consulting Arborist select one of its methods to satisfy a Standard of Care in an appraisal assignment? As noted above, the *Guide* has never been promulgated as a standard. Consulting Arborists can and do properly use other tree appraisal methods.

As one example, many Consulting Arborists are familiar with the i-Tree suite of urban forest management tools (i-Tree 2015a). i-Tree's Eco (2015b) and Streets (2015c) tools can develop and report monetary structural and replacement values for trees. While *Guide* methods underlie these i-Tree valuations, a Consulting Arborist employing the i-Tree valuations does not complete the calculations or even refer to the *Guide*.

i-Tree tools can also develop and report benefits-based ecosystem services values (see, for example, McPherson 2007). While the 9th Ed. *Guide* describes the Income or Benefits approach to value, it provides no specific methods.

ASCA members outside North America employ methods that are generally

accepted in their practice regions. A Consulting Arborist in the UK, for example, might select the CAVAT (Neilen 2010) or Helliwell (2010) method for tree valuation.

In an ASCA context, the adequate, appropriate, and competent tests still apply when selecting a valuation method. As noted for forensic practice, any judicial, legal, or regulatory requirements to use or exclude particular methods would, of course, apply.

Tree risk assessment involves the systematic identification, analysis, and evaluation of the risks posed by trees (Smiley et al. 2011, p. 7; TCIA 2011, §92.30; Dunster 2013, p.13; ISA 2014). In recent years, qualitative tree risk assessment has been formalized in North America in a family of related publications:

- *Tree Risk Assessment: Best Management Practices* (Smiley et al. 2011)
- *ANSI A300 (Part 9)-201—Tree Risk Assessment* (TCIA 2011)
- *Tree Risk Assessment Manual* (Dunster 2013)

Consulting Arborists may be familiar with other, earlier North American risk assessment systems (see, for example, Smiley and Fraedrich 1993, Matheny and Clark 1994, Smiley et al. 2002, Pokorny et al. 2003, Dunster 2009) or systems from other regions (see, for example, Ellison 2005, 2015). Some Consulting Arborists may feel more competent with, or prefer one of these other systems. Some tree risk assessors incorporate elements of other systems to fit the facts and circumstances of particular assignments.

Simply because a method is non-standard or extra-standard, does not make it sub-standard.

Does an ASCA Standard of Care require Consulting Arborists to select only the tree risk assessment methods in ISA's *Best Management Practices* or *Tree Risk Assessment Manual*? We look to those sources themselves for the answer. The *Best Management Practices* states clearly:

"Because trees are unique living organisms, not all practices can be applied in the same way to all trees. Procedures and methodologies should be selected and applied as appropriate, with consideration for

what is reasonable and proportionate to the specific conditions and situations" (p. 2) and "Both the quantitative and the qualitative approaches [to risk assessment] are valid when applied properly, with reliable data and valid assumptions" (p. 8).

The *Tree Risk Assessment Manual* clarifies that there are both quantitative and qualitative approaches to risk assessment and that its approach is qualitative. It also states clearly:

"Each [approach] has advantages and disadvantages and each may be appropriate with different objectives, requirements, resources, and uncertainties. Both the quantitative and qualitative approaches are valid when applied properly with reliable data and valid assumptions" (p. 6)

Looking to the secondary literature, Koeser et al. (2013) compared the advantages and disadvantages of forms used by three qualitative systems, including:

- The so-called ISA Form (Matheny and Clark 1994)
- The USDA Community Tree Risk Evaluation Form (Pokorny 2003)
- The ISA BMP/TRAQ Form (Smiley et al. 2011; Dunster 2013).

Clearly, Koeser et al. envision tree risk assessors selecting any of the three systems.

Non-Standard Does Not Always Mean Sub-Standard

Published standards, best practices, and generally accepted guidance—loosely grouped as "standard"—provide a benchmark of what is adequate and appropriate. Clearly, an alternative method that falls short of being adequate and appropriate for a defined assignment could be characterized as sub-standard. But simply because a method is non-standard or extra-standard, does not make it sub-standard. It might even exceed the so-called standard in terms of its reliability or suitability.

Non-standard or extra-standard techniques are particularly suitable when a "standard" or generally accepted method a) has not been revised and is overtaken by the practice and science of its field, b) is new and untested, or c) is inadequate or unsuitable for the scope or particular facts and circumstances of an assignment.

Again, in an ASCA context, the adequate, appropriate, and competent tests still apply.

Conclusions

The ASCA SPP gives Consulting Arborists broad discretion to exercise professional judgment in selecting suitable methods. There is no duty to use any particular, proprietary, or "standard" method. It is also reasonable to infer that there is no duty to exclude any such method.

Consulting Arborists rely on their knowledge, training, and experience to select methods that are adequate and appropriate for the facts and circumstances of each assignment. Consulting Arborists must also be competent to use, explain, and defend the methods they select, or they must obtain competent assistance.

Simply because a method is non-standard or extra-standard, does not make it sub-standard.

Consulting Arborists must understand that great responsibility goes hand in hand with their professional discretion to select methods. They have complete, personal responsibility for the adequacy and appropriateness of the method selected and for their competency in both applying and explaining it. To the extent that particular methods are "generally accepted," popular, or widely used, selection of other methods may require a greater ability to defend, explain, and justify the selection. In any case, there is no ASCA duty to invariably use any particular, proprietary, or standard method.

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