

The Ethics Debate

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By Nathalie Rooseboom de Vries van Delft

A discussion forum launched by one of Europe's preeminent testers is laying the groundwork for what could ultimately lead to an international software testing code of conduct.

Imagine this: It's Monday morning. You're browsing through office e-mail when a colleague comes in to show off his new hairdo—one that looks as if the gardener was practicing his trimming skills on your friend's head—and to ask what you think of it. Now, you have several options: You can tell the truth, which will certainly earn you a reputation as an oaf. You can tell a "white lie" and say you like it. Or you can be "economical" with the truth, saying something like, "It's unique," or, "It defines you"—this third approach keeps you honest yet inoffensive.

Most of us probably choose the last option in most cases, if only to preserve peace on the work floor. But what happens when a similar situation occurs regarding a software testing project? It's easy to say: "As a tester I always tell the truth," but is it that simple to do? Testers typically test "bad" or erroneous situations, but can we break the law to meet our test goals when the software under test is a system that *regulates* law? What happens in the case of anonymized data, especially when it comes to the Dutch or U.K.'s Data Protection Act and other data protection regulations?

In the Netherlands, for instance, there is a system under development called Digital Medical File that enables health-care practitioners to access a patient's medical information from anywhere in the country. One of the requirements, derived directly from the Dutch data security act, states that this information is only to be seen by practitioners currently treating the patient. Testing the unauthorized access, even using anonymized data (assuming that data is not your own medical information) is breaking the law.

In my work as a tester I've often encountered situations in which I could have used a "Software Testing Act" to provide

community-accepted guidelines to ethical good practice. Because despite believing that my perceptions would lead consistently to the most incorruptible option, I discovered that my frame of reference wasn't always the same as others'.

To address these and related concerns I set up an online forum where testers debate topics of software testing ethics. The goal isn't necessarily to establish a Software Testing Act per se, but to stimulate discussion and gather information and opinions toward reaching an accepted "software testing code of conduct" testers can use as a guide, to our benefit and that of our clients.

So consider this article food for thought, then join the conversation online (go to the Ethics Debate forum at www.funtestic.nl, or on Twitter, add the hashtag #SWTestEthics) and share your views on the subject.

What Is 'Ethics,' Anyway?

Exactly what is *ethics*? Various dictionaries define it differently: It's the study of what is morally right and what is not. It's a branch of philosophy that seeks to address questions about morality—concepts like good and bad, right and wrong, justice, virtue and so on. It's a mindset that motivates actions—in essence, “the ends justify (or don't justify) the means.”

Ethics plays an important role not only in philosophy but in theology, medical science and other areas. *Applied ethics* is a set of ethics related to a certain area of expertise or a particular part of human life. Here, we're talking specifically about ethics related to software testing, to keep our discussion manageable and relevant. (The broader specialty known as computer ethics covers some of the same ground, such as data and its relation to privacy, but its practitioners also explore wider-scope topics, like the impact of computers on society.)

So what sorts of approaches, attitudes and behaviors are generally perceived by our community of testers to be ethical? What can we agree on to be accepted practice, what is clearly right or wrong, moral or immoral, black or white, and where can we tolerate shades of gray?

When I first set up the Ethics Debate discussion forum, in early 2008, I got very little response; although many testers found the subject intriguing, they were reluctant to participate. Eventually I found out *why*—I hadn't made clear that some of the discussion scenarios I'd set up were purely theoretical. Some people thought they reflected my true actions and opinions, and were appalled. “How could a tester think and act like that? Doesn't she have any professional integrity?” Apparently I had struck an ethical nerve!

This strengthened my resolve to pursue the subject, but in a clearer way. By giving testers the freedom to explore controversial situations from different viewpoints, in a safe environment where they wouldn't be judged or held accountable, I've discovered that people enjoy sharing their opinions openly and honestly, without fear of personal or professional backlash.

Following are five sample ethics statements, each followed by “right” and “wrong” contentions, and a brief analysis of the discussion that has taken place thus far on the Ethics Debate forum. I've chosen these examples because they've elicited the liveliest, most thought-provoking and, often, entertaining debate, on the site and in my offline conversations with other testers. I invite you to get a taste for the topics here, then join us online and post some ethics scenarios of your own (reality-based or purely theoretical) for your peers to weigh in on.

1 It's OK to break the law to meet your test goals.

RIGHT: “Undoubtedly true. As a tester you must test all behaviors, both right and wrong, legal and illicit. To determine if a speed trap works, for instance, I must drive over the maximum speed allowed.”

WRONG: “It's very simple. A tester is a citizen just like any other and is bound to operate within the law. Laws set the legal boundaries within which we test both good paths and alternative paths, whether you test in a traditional or an exploratory manner.”

One question that arose at the start of this discussion was about the definition of “law” in this perspective. As with testing itself, the statements should be very clear to get a discussion to the point. In this statement, the “law” is a rule, or system of rules, usually set by a government, intended to order the way a society behaves. This statement didn't simplify the discussion, but it certainly provided a clearer context.

The remarkable finding on this topic is that most testers who weighed in said they're willing to break the law, if—and only if—conditions are carefully set and documented. Some even said they wouldn't consider it breaking the law if it were approved beforehand by the software's owner or even the owner of the law itself. Not surprisingly, though, many testers are only willing to perform these sorts of “law-bending” activities when they're assured they won't be held personally accountable or punished for any consequences.

Often, alternatives that fall within the boundaries of the law can be used if their risks are considered carefully and their behavior is expected to be the same in the live situation. Instead of speeding to test the reliability of

a speed trap, for instance, a tester might use a closed circuit system or set the allowed speed limit slightly lower than the original. In practice, though, there are some systems for which no alternatives are available and/or the risks are too high; in these cases most testers argue that the law can be broken for test goal purposes, again, providing the situation is documented and no dire consequences are anticipated. In the Netherlands, for example, there is a system under test that makes it possible to travel with a chipcard in all kinds of public transport. In keeping with the Data Protection Act, the specific travel data is viewable only by the card owner; testers must use only their own personal travel data for test purposes to avoid breaking the law.

2 You must always tell the truth.

RIGHT: “The *raison d'être* of a tester is to assess, report and advise on product quality. The value of the advice is based wholly on how accurate or ‘truthful’ it is. It follows, then, that as a tester, you have no choice but to tell the truth no matter what!”

WRONG: “We testers aren't typically the bearers of glad tidings. When I suspect I'm to be personally blamed for the results I report, and for which I'm not personally accountable, I tend to be extremely economical with the truth. I don't want them to shoot the messenger—literally!”

This discussion also started with a philosophical question: “What is the truth?” Philosophy books are filled with theories from great thinkers who have bent their minds over this one, and there's still no consensus. For purposes of this discussion, let's define truth as “the real, objective facts about a situation, event or person.” But let's also note that truth is perceived on an individual basis and is thus a relative, subjective concept. For example, somebody who loves sunsets might state as fact, “The sunset is pretty”; someone who hates sunset might perceive, “The sunset portends something pretty” as more truthful.

The core of most answers during these discussions is that one should always tell the truth. Yet many testers say they would not tell the *whole* truth to everybody. Some would only tell all the facts to a certain colleague, some would only share “highlights” with particular stakeholders, and others would stay mum altogether to

avoid lying. The themes of “trust” and “safety” crop up over and over again. Bottom line, most testers believe truth is essential to the profession, but that it is a flexible concept that can be applied in different ways depending on person, environment and importance. If the test environment doesn't feel safe to the tester, and the tester fears negative consequences of sharing his or her findings, the whole truth may never be told.

3 You must always be able to use privacy-sensitive data to test.

RIGHT: “There's no better test than real-world testing. As long as you set everything in place to protect the data and are compliant with data protection regulations, you can without question use the necessary data unanonymized.”

WRONG: “You can dream of testing in a production environment, but let's face it, that hardly ever happens. There are some rare exceptions, but overall you must stick to the rules—the test data you use must be anonymized. Simple as that.”

The key to the ethics of this statement is the phrase “be able.” Most testers participating in this discussion say the use of privacy-sensitive data isn't a must in most circumstances, and when the risks or circumstances require an unanonymized set of data, we should be able to use such a set. But there's another “but” here. The physical test environment must be set up with optimal security before this data can be made accessible. This means, for example, that a stand-alone terminal (or even an entire system) with the needed software and data is set up in a room, and only authorized testers have a key to that room. (I worked in such an environment once, at a bank—very lonely experience!) Remarkable here is the discussion regarding responsibility for use of the data: Most testers say the use and safeguard of anonymized data is not the responsibility of the tester (or test team), but of the organization to which the data belongs. In practice, this means crystal clear agreements with your stakeholders about ownership, usage and security of unanonymized data are essential.

Meet STP's New Director of Membership

Rich Hand wrote the book—literally—on building professional associations. Now, he's leading the charge to help software testers harness the power of community.



Rich Hand,
STP Director of Membership

Rich Hand knows from experience that much can be accomplished when people with common goals join forces. As a longtime member of the management team at HDI, the country's leading help desk organization, he drove professional membership to new heights. Now, as STP Collaborative's new director of membership, he intends to do the same, and more, for the software testing community.

Rich hopes that software test professionals will embrace the power of community and actively participate to make the role of tester a more respected and sought-after position in

software development. And that will only happen, he says, when industry pros collaborate more effectively to define and promote the value of their work.

Read the following excerpt from Rich's book *The Professional Association: Cultivating Leaders, and Harnessing the Power of Community* ©2008 HDI to learn more about the benefits of professional communities and determine how they apply to software testing, then contact Rich at rhand@redwoodco.com to share your ideas about building the software testing community and advancing the goals of the profession and its members.

Since the founding of our country, Americans have understood the value of being able to associate and assemble. Our founders understood and believed in the concept of forming "associations" as important to the future of our country, so much so that they wrote it into the United States Constitution. The First Amendment reads: "Congress shall make no law...prohibiting...the right of the people peaceably to assemble..."

The need to assemble and associate is a human trait that goes back to the beginning of time. And it will continue to prevail as long as humans exist. That's a good thing for those of us who run and belong to associations.

There are very few people out there today who would argue against the importance or power of associations in our culture, but I believe associations are the key to leadership both for industries and the professionals within those industries.

We can all agree that an "association," like a "corporation," is nothing more than a term or legal entity that wraps itself around the individuals that make up the organization. Without the body of individuals there is no association. Without the "wrapping" of individuals, there is no "power" or reason behind an association. It is truly a symbiotic relationship—one worth understanding if you want to be a leader in both your career and your professional association.

Associations have become the most effective means of career advancement, personal growth, industry respect and cultural changes in the world today. If you want to find opportunities to grow as an individual, you must find the association that best fits your personal or professional needs. Organization membership can help you grow as an individual and advance your career.

The Importance of Serving

Any successful association has one mission—to serve its members in areas most important to them. A simple concept, but a monumental task to do well. Google "professional associations" and you get nearly 15 million search results. Granted, there are many duplicate listings, but this gives you some indication of the number of associations and the amount of association-related activity.

According to the American Society of Association Executives, there are more than 86,000 trade associations in the United States, and a million philanthropic or charitable organizations. The most well-known associations represent a diverse group of individuals, but they all have one thing in common—they serve their members. For example:

Profession/Industry: American Bar Association; American Medical Association; IEEE (formerly Institute of Electrical and Electronics Engineers);

National Association of Realtors; American Society of Composers, Authors, and Publishers)

Demographic: Association of Retired People, National Association for the Advancement of Colored People, National Association of Women in Construction

Political: Grand Old Party, Democratic Party, American Political Science Association

Hobbies/Interests: American Horticultural Society, National Genealogical Society, Handyman Club of America

All these associations, despite their diverse memberships and different focuses, share common goals and functions:

- Keep members informed of things that can impact them most, both positively and negatively.
- Research and educate, and filter out useless or false information for members.
- Create standards of behavior, technology and recognition.
- Perform essential functions, such as managing health-care programs.
- Watch for legislation that can impact an industry.
- And perhaps the highest priority of all, bring members together to discuss critical issues in face-to-face and virtual forums to foster improvement and growth, both individual and organizational.

4 A tester may be responsible for acceptance.

RIGHT: "Sure. It's called 'acceptance in the small,' and we all do it all the time. Happens every day. Not the main acceptance of course, but along the way you advise enough on the quality of a product, and you know the requirements better than the clients themselves, so why not?!"

WRONG: "There's no question in my mind about this one. As a tester, I test; the stakeholder or client should accept. A tester advises—nothing more."

No surprise that, at least to start, this discussion brought more questions than answers. What does "acceptance" mean in this context, and on what level is the acceptance being done? Ultimately, the consensus was that there are "rights" on both matters: Acceptance—meaning, giving the go-ahead to the next step in development or production—is *always* the responsibility of the client or the issuer of a requirement. However, acceptance is done by testers when the level of acceptance (related mainly to test level) isn't crucial to the end product, or when the client/issuer has delegated the responsibility of a certain acceptance part—i.e., a tester *may* accept certain aspects or stages of a product as long as the client/issuer remains responsible. Note that when a tester does acceptance, it's essential to inform the client/issuer on the acceptance done, and the status and basis on which it was done. Also, only the client/issuer can do acceptance of the final product—the tester can *never* take responsibility for that.

More to Come

There's still a lot of research to be done and many topics to be explored before we can achieve community consensus on an international "software testers code of conduct." Thus far, the discussions have taken place only in small groups and mostly among European participants, which limits them in some geographic, cultural and even religious aspects. So be sure to get involved in the discussion online, and share some ethics scenarios of your own!

5 You should set aside your own standards and values to test thoroughly.

RIGHT: "A good tester operates in the context of the assignment, taking on prevailing standards and values, even if that means setting aside his or her own standards and values."

WRONG: "A change of behavior is fine, as long as it's within my personal standards and values or that of the company I work for. If the context of the assignment isn't compliant with these, I politely decline. I won't sell my soul to the devil!"

This discussion is particularly interesting because it touches so much on *feelings*, becoming very personal and leading to some fiery conversations. Participants have shared real-life experiences, both IT and non-IT, that have stretched their own standards and values. When it comes to testing, it seems some people are prepared to set aside or shift their beliefs to get the job done and some are not. The key, if you're in the latter group, is to speak out as early as possible, even if it may result in declining an assignment. It feels "right" to mention here that most work is best done when we're committed and believe in the assignment—doing work that doesn't "fit" us ethically is generally not beneficial to the client, the tester, or the quality of the work.