Why is Communication So Difficult?

Peter Hartauer
QualityMinds GmbH
peter.hartauer@qualityminds.de
@certifiedtester

1 Abstract

Communication is essential for a successful project. Acceptable results can only be reached when all participants are communicating effectively. However, it is often difficult to establish this level of communication.

This talk encourages all project participants to think about their own methods of communication. It uses a real-world example to point out one specific problem: the "Chinese Whispers" cumulative error, which is characterized by people talking only to the person next in their hierarchy. It results in distorted information and creates an outcome quite different from the input. The talk will present the issue in a humorous way and give some solid advice.

2 Biography

Peter Hartauer is a quality engineer and a tester by heart - because good products are fun.

In the beginning of his career, Peter worked in a large multinational company in Erlangen, Germany. As a consultant for customers in the public sector and in internal projects he became riveted on testing, working his way up from manual tester to test manager in a multicultural project. In 2011, he started working as a trainer for the ISTQB, REQB, IQBBA and IBUQ certification classes.

Peter is an active member of the testing community: He follows the newest trends in testing, attends conferences, organizes the Nuremberg's Testers Meetup and contributes to the Ministry of Testing Community. His Twitter handle is @certifiedtester.

Summary:
2005 - 2008: Apprenticeship at Siemens IT Solutions and Services GmbH
2008 - 2011: (Junior) IC Consultant at Siemens AG
2011 - 2016: Trainer and Software Process Engineer at Knowledge Department GmbH
2016 - now: Team Lead Testing Essentials at QualityMinds GmbH

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1 Introduction

Communication is the most important thing in a project. More than testing. More than coding. More than planning. More than managing. It's all about communication. We communicate all day, discussing problems and try to solve them. Spoken and written words carry the information we want to share with other people.

To this end we need to ensure that we communicate effectively. That's the difficult part, because usually communication is more than words. It contains emotions, facial expression, gestures and much more. It is also driven by the context, the relation to the person you are speaking to.

After all, communication is important. It can improve the project, the outcome of the project, and the quality of the product. If you can convey all the things you want to say with your words then your expectations and intent can be understood more easily by others. So why does it so often fail?

2 So, what's the problem?

In my years as a software tester, as a Scrum Master, and as a consultant and a trainer for many companies in Europe, I realized that a lot of the communication is not respected enough by people. Information often flows in one direction only without any feedback and not really wanting a response. In hierarchical organisations especially there is a missing culture of communication. The results are sometimes catastrophic: wrong outcomes, buggy products and much more.

2.1 NLP as a start

A lot of the defects in communication are systematic. That means we are doing them over and over again, because we are "programmed" to act like that. But, systematic also means that there is a pattern. And where there is a pattern, there is a possibility to break that pattern. There are a lot of books, blogs, and other resources dealing with communication defects and how to solve them. One of the most popular is Neurolinguistic Programming (NLP). It was developed in the 1970's for the treatment of psychological illnesses. It was intended to help the therapist to understand the patient more clearly. NLP deals with three main defects in communication I often encounter even today.

Generalization is one of the defects you may encounter. Last week I heard the following sentence in a company's jour fixe: "If we don't deliver on time, the product will fail." It's a special case of generalization because the product will not be successful even if you deliver on time. The failure or success of the product depends on a complex combination of different factors like costs, time, environment, quality and more.

Another defect is deletion where necessary information is omitted. In a management conference the speaker said: "You have to believe me and carry out the orders I give you." The funny part was, the speaker used the deletion by intent. He wanted to show how problematic it is to obey orders without knowing everything. He purposefully didn't give any information on what would happen if somebody didn't follow his instructions. The deletion is the missing consequence and the free interpretation. Everybody was looking for a safe space, so everybody obeyed the speaker. They painted their faces with green paint. Five minutes later it was time for lunch, but people with green faces were not allowed in the dining room. It turned out that the paint was very difficult to remove, so the dining room remained almost empty while the queue for the toilets grew. The speaker said to me: "Look at the sheep. And they think they are leaders."

The third defect is distortion. It is generated by the speaker, often unintentionally. "I always have to do all the stuff." But who is saying that? "I have to work at least to 8pm because everybody will say, that I'm lazy if I don't." Really? Perhaps you have good time management. Perhaps you carry out the work much faster than others because you're more intelligent?

2.2 Biases to intensify them

There are more than 130 biases you can find while surfing the web. The swimmers body illusion, the availability bias or the sunk cost fallacy. All of them influence the way we behave, the way we communicate. One of the biases is the authority bias. I will explain this bias, because it will be important in understanding the Chinese Whispers defect I want to explain later.
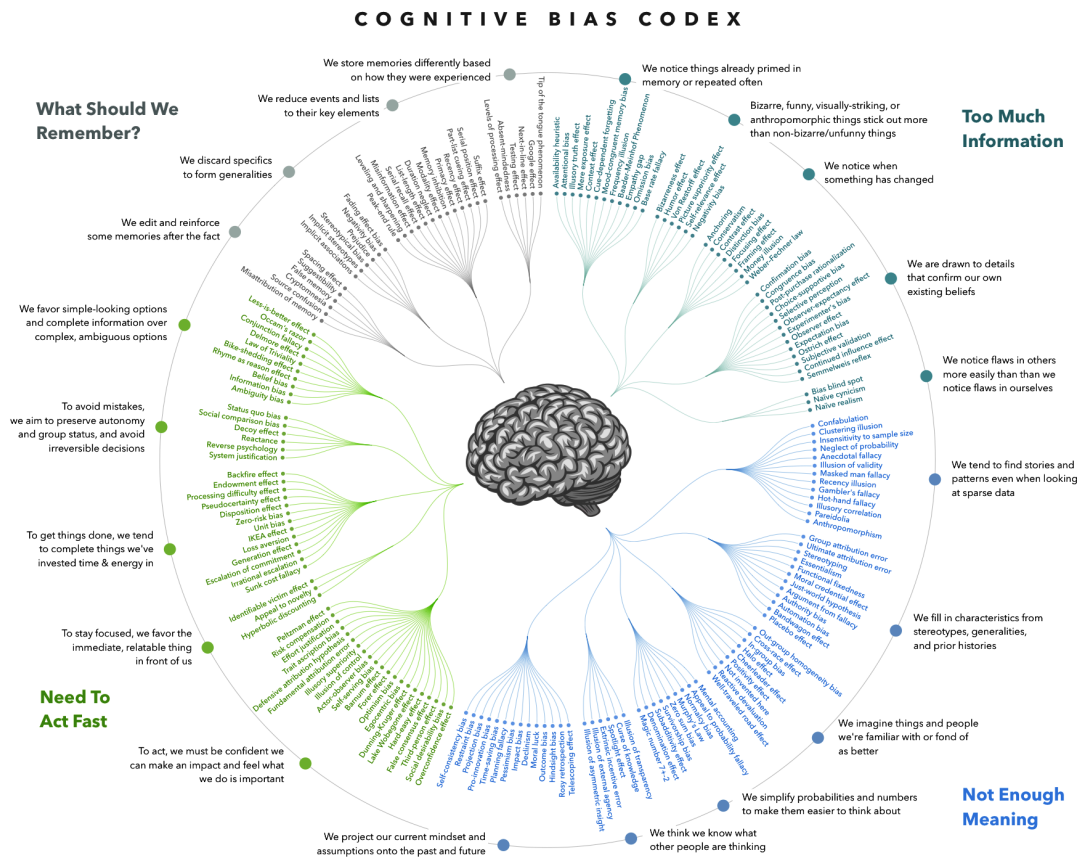
The authority bias is one which predisposes us to respect authorities much more than we trust ourselves and so we stop thinking. It is related to the example of deletion. The speaker used his authority and

everybody stopped thinking. To explain it a little bit more concretely, just think about your latest tests. If a "simple" tester says: "The product is crap. I found so many defects that it will be catastrophic if we release right now!" Would you trust them? If a test manager with a high reputation in the company says: "The product is crap. I found so many defects that it will be catastrophic if we release right now!" Would you trust them more? And why? Is the manager smarter than the tester who executed the test and really saw the problems in the product?

3 How the improve quality with communication

Let's assume that the quality of your communication directly affects the quality of the product. Wouldn't you set up a communication test? What if this wasn't just an assumption, but product quality really does improve with good communication? We take classes in better coding, better architecture, professional project management, better testing, better everything. Instead, what we really need is better communication classes. Many people think we are good speakers because we use our speech every day, almost always in spoken or written formats. Consider what would happen if you were no longer able to use words to transfer information. What would you do?

To increase the complexity further, imagine trying to give this information to a person without a direct line of communication. A person that you don't know. How would you do this? Sign language? Prototypes? How would you effectively communicate?

In a lot of projects and companies I have encountered the tapper and listener syndrome. It is another bias that leads to the Chinese Whispers defect. You start omitting this information because you assume that others already have the same knowledge as you. Why is it called tapper and listener? There was an experiment that divided people into two groups. The first group were tappers, and the other were listeners. The tappers were given a list of songs like "Happy birthday" or "The Star Spangled Banner". Then they have to tap the rhythm of the song and the listeners have to guess the song. In advance the tappers and listeners were asked about the probability the listener would guess the song correctly. The tappers said that the others would be right 50% of the time. So, one of two songs is guessed right. The listeners were more sceptical and thought that they would be right 25% of the time. While conducting the experiment, the quota of correctly guessed songs was about 2%! The most disappointed group was the tappers. Why? They couldn't believe that the listener misinterpreted "The Star Spangled Banner" as "Happy Birthday". Why did this happen? The tapper has the information, the listener doesn't. The tapper has the melody in mind while tapping, the listener only hears some sort of freaky Morse code.
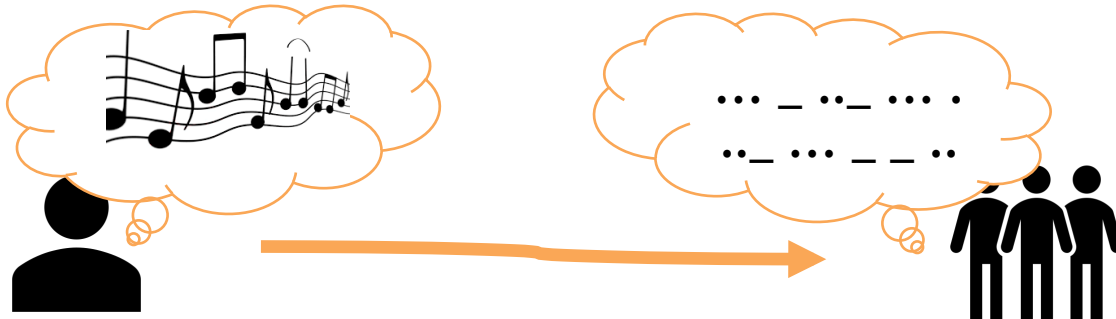

4 Chinese Whispers

Perhaps you know this game from kindergarten, from your youth, or perhaps from your kids. Five or more children sit in a row and the child at one end of the row thinks about a word. Then this word is quietly whispered into the ear of the child sitting next to the first. Then the second child gives the information received to the next child. And so on until the last child receives the information. This child has to loudly speak out the "word". And in most cases, it is definitely not the word provided by the first child.

If an easy word is chosen, like "Needle" or "Bus", it is more likely that the correct information is transported. That's because it is an easy to speak and mostly unambiguous word.

You can increase the difficulty if you choose a word that rhymes with, or sounds similar to, another. If you choose "Book" you can get "Hook". Or if you choose "Mouse" you can get "House". In that case the information transforms to something else. And there is definitely a difference between my giving a "book" or a "hook".

To create real chaos the child could choose a complex word. For example: "Surreptitiously". I'm pretty sure that this word wouldn't make it through Chinese Whispers correctly. Most often the result would be something Germans call "Wortsalat" or "Buchstabensalat". It literally means "word salad" or "letter salad". Everything is scrambled. If this happens it is great fun for the kids!
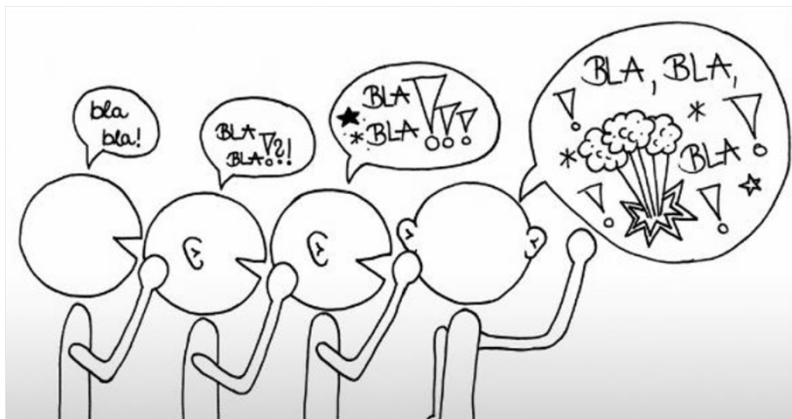
Why don't the children ask their neighbours to repeat the whispered words if they don't think they've understood the word correctly? Why not ask if the word is understood correctly? Well, that's the only rule in the game: No asking, no repetition.

5 The Story of Chinese Whispers

So, what does this game have to do with reality? Why is this game relevant to quality and testing? Let me take you to a project of mine from some years ago…

The project was at a big IT-consulting company that was, in turn, part of an even bigger company which produced lots of different goods, from electronics to machinery. The project's objective was to create an IT-asset management system for the company itself as well as a number of external customers. The system should be capable of managing orders from employees if they needed something for their work. The most important categories were IT equipment, telephone infrastructure, moving of offices, file sharing and access rights, servers, room bookings and office furniture. There were other things as well but as you can see, the system should be capable of everything.

The system was a complex client-server application with a lot of different rules, databases and connected systems orchestrated by JBoss. The team had to connect to the current LDAP and Active Directory. To make it even worse, there was an IT management system capable of performing some of those tasks in one division of the company that didn't want to give up their system. So, it had to be integrated.

The development time was about 5 years in total. The number of parallel users was estimated to be more than 5.000. The budget, of close to 2 million Euros, was far too low.

Over the years the team produced a working system in several releases, but it was not finished. In spite of that the CEO deciding in a management jour fixe that the first customer should be given access to the system within two weeks. Everybody was so enthusiastic at the beginning that the manager decided a risk management strategy would not be necessary.

The company was very hierarchical and you had to follow the defined way of "communication". You were only allowed to talk to your subordinates and to your one and only supervisor. Therefore there was a perfect chain of children sitting next to each other. Oh, sorry: People.

After testing the system, our tester (let's call him Bob) raised a warning that the system was in a non-deliverable state. He did this via email because the team was distributed all over Germany. This is the email Alice, the test manager, received:

Hi Alice,
I'd like to inform you about the latest test results:
I have executed 250 test cases and only 53 were successful without errors.
All major risks are still not mitigated. In my opinion there is no chance for a successful roll out.
We haven't been given enough time to fix the errors and the product will not work at all. Please inform everybody.
Bob

Let us analyse that email. What does Bob do well, and not so well? At first, he takes the initiative to speak out about a problem. He mentions that there are problems and even included figures. So, there is no defect in the words he used. Bob does state a personal assumption but makes it clear to Alice that this is what it is - an assumption. The only big problem is the request for action, where Bob says "everybody" without specifying who this included, is a deletion.

After further emails were exchanged between the developer (Charlie) and Bob, Alice writes an email to Daniel, the Development Lead:

Hi Daniel,
Bob and Charlie informed me that meeting the deadline is impossible. The testing department won't give this release a go ahead until all major bugs are fixed and all critical (priority 1) test cases are successfully executed.
Alice

This email is interesting, because it is the beginning of the Chinese Whispers. So, let's take a closer look at it. She states the impossibility of meeting the deadline, without including what would go wrong. This is a deletion of what problems might arise. This information is in the next sentence, but the consequences of releasing the product anyway are still not included. By generalizing in this way, Alice reduces the criticality.

Hi Eric,
Alice informed me that an on-time release of our product is going to be difficult. They have too many bugs and have problems executing all the important test cases. We should monitor the situation by keeping an eye on development and testing.
Daniel

Daniel informs the project manager Eric and the next defect strikes. Daniel seems to have massive respect for Eric. Authority bias combined with a fear of asking softens the "impossible" to a "difficult". This is the point where everything is going wild and crazy. In this project everybody acted this way. You can see an increasingly soft tune in the emails. The following email is from the project manager (Eric) to the business unit manager (Franck) and his email to the CEO (Gerry):

Hi Franck,
it seems there are some difficulties in testing and development. Something about some bugs that occurred and too little time to test everything. I think we should go on with our plan but keep our metrics in mind, so we can react.
Eric

Hi Gerry,
you wanted some information on the new release. Eric told me that some bugs occurred, and they need to test further to execute the test cases. I think we are on a good way. Will you tell Hannah, so she can inform our customer?
Franck

What happened? I will call this a cumulative error. Everybody acted the same way and softened the message. The impossible situation morphed into being on a good way! And accordingly, Gerry goes on to send this email:

Hi Hannah,
good news from our development and testing department! We are on a good way and keep the work up with our actual release.
Can you inform Irene?
Gerry

At the end, the customer representative (Irene) receives the complete opposite of the initial warning.

5.1 The Big Bang

As you can see, this conversation went really strange and had an interesting outcome. At least we can learn from their mistakes. For the company it went terribly wrong. After deploying the system to the customer an undocumented and untested function dropped the customer's database and caused a stop in production and a loss of 1.6 million Euro. The CEO was not amused with the outcome and wrote the following email:

Hi Alice, hi Daniel,
can somebody explain to me what happened after releasing our new version?
I THOUGHT WE HAD A GOOD DEVELOPMENT AND TESTING DEPARTMENT???
Why did this happen? What should I tell our customer? His systems were going down and we have had a massive data loss. We cannot afford such bad work! Why was I not informed about these massive problems?
Crisis meeting in 15 minutes in my office! Gerry

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6 Lessons Learned

Who is guilty? I don't want to blame a single person. Instead I want to focus on the important details. As it is a cumulative error there are a lot of factors contributing to this situation. But there are some indicators that can give you a clue that there is something strange happening.

6.1 Subject line of emails

An interesting part was the subject line. It was growing. From:

"Test results"

To:

"FW: FW: FW: FW: FW: FW: FW: RE: Test results"

In addition, all of the previous emails were attached! The first indicator and lesson learned is that you should read all the emails throughout. Especially if the email was forwarded multiple times. I advise you to stop the chain if there is the second "FW:" in the subject line. Furthermore, read the whole email. Don't expect that the latest comment has all the information.

6.2 Don't trust the rabbit

If there is only a vague expression of detail in an email, then ask the people directly. This concerns all words like "some", "good", "maybe", "eventually", "only", "always", "sometimes" and so on. Ask for the real meaning and if there are exceptions. Fighting generalization is like cutting the heads off a hydra.

6.3 Talk about the risk

If you see a risk, you are the one to talk about it! Even more so if you are a tester or test manager. It is your job to inform others about potential risks. If the risk is too big, and you expect severe damage, then ignore communication rules. Talk directly to the people who are affected and whose decisions are based on your information.

6.4 Don't play the game

There are a lot of companies playing that Chinese Whispers game. Don't be part of it. If you are forced to play it, explain the risks. You lose information every time it is transferred via another person. That's normal, that's human. That's a common linguistic defect. But it is systematic. And you now know the root cause and can do something against it.

7 Conclusion

This event as described may appear to be exaggerated. I wish I could say "Yes, it is fiction!". Sadly, it is not. All of this did happen and it was a pity to see the cumulative effects. It was a big lesson for me and has changed the way that I act as a tester or test manager. Quality improvement is not only testing, reporting, finding bugs and debugging, reviews and all the other tools we have. Quality is based on communication. The same problem can occur whilst creating requirements and communicating them to developers. It can occur during estimations. It's everywhere!

I want you to think about your method of communication. The way you distribute information. I would encourage you to improve your communication skills, to watch for biases and linguistic defects. Then you will have taken a further step "On The Road To Quality".

Good communication is as stimulating as black coffee... ...and just as hard.

- Anne Spencer