inside:

THE WORKPLACE

Do You Have Both ORs in the Water?

do you have both ORs in the water?

Our articles often focus on communication, and how to communicate more clearly. Most people believe they are communicating clearly most of the time, but others may not share that opinion! Sometimes the biggest problems are caused by the smallest words. We have previously discussed the use of How and Why, as well as Yes and No. This column will discuss OR, and next month we will talk about BUT.

When we say "A or B," we are asserting that at least one of A and B is true. If both may be true, the OR is called an "inclusive or" – if we are further asserting that A and B cannot both be true at the same time, the OR is called an "exclusive or." In the C language, we use '|' for inclusive OR, and '^' for exclusive OR.

In common usage, we use OR very sloppily:

"You had better clean up your room, or there'll be no supper!"

"Either we ship by Friday, or I'm out of a job."

"Joan and Jim or Bob will be coming too."

"Is this handled by Jack or Jill?"

The first two statements are using OR to express "if . . . then." If you do not clean up your room, I won't feed you. If we do not ship by Friday, I will be fired. In this sense, the OR does have a pretty clear meaning. Its function seems to be to deflect attention away from the speaker by making the statement appear to be some kind of a law of nature. So the second statement might more truthfully be stated as:

"If we don't ship by Friday, I'm afraid I will be fired."

It could also mean

"If we don't ship by Friday, my boss will be so angry he will fire me."

It is a good deal easier to respond to one of the two restatements than to the original. In the restatements, the problem is more clearly stated, and the speaker's concerns about it are explicit.

In general, restating an OR as an "if . . . then" will open up the discussion more. "How do you come to believe you will be fired?" "What else might we do to make your boss less angry?" "If we ship a partial order by Friday, and the customer is happy with that, how could your boss be upset?"

The third example of using OR points out that, unlike C, English is very sloppy about what OR actually means. The statement could be interpreted to mean that

Joan and Jim might come.

Joan and Bob might come.

Bob is coming alone.

All three might be coming.

The problem is twofold. English does not typically distinguish between inclusive and exclusive OR. And English doesn't have a precedence rule (like C does) that says that AND takes precedence over OR.

by Steve Johnson

Steve Johnson has been a technical manager on and off for nearly two decades. At AT&T, he's best known for writing Yacc, Lint, and the Portable Compiler.

<scj@transmeta.com>

and Dusty White

Dusty White works as a management consultant in Silicon Valley, where she acts as a trainer, coach, and troubleshooter for technical companies.

<dustywhite@earthlink.net>

THE WORKPLACE | SYSADMIN | PROGRAMMING | OPEN SOURCE | COMPUTING

The most dangerous use of OR, however, is shown by the last example sentence. As we just pointed out, English doesn't typically distinguish between inclusive and exclusive ORs, so perhaps both should handle it. Just by making that statement, however, we limit our options severely. Perhaps it should be handled by Pat or Bill. There is a presupposition (we talked about presuppositions in an earlier article) that either Jack or Jill is the correct answer.

In a business setting, limiting our choices in this way is rarely the most productive way to think. Especially if we are having trouble making a decision, we need to look at the problem again and see if there aren't shades of gray between the two poles. Perhaps there is an "out of the box" solution that addresses a higher-level problem at the same time. Even the "inclusive" OR excludes many possible answers to our problem. By being more aware of our language, we can open the doors to alternatives that might be otherwise hidden.

We have seen that the short word OR has a lot of problems in regular English usage. Sometimes, it's a wimpy way of saying "if . . . then," limiting our thinking and turning attention away from the speaker. Sometimes its meaning is ambiguous. And sometimes it serves to artificially limit our alternatives. Becoming sensitive to these nuances can help you express yourself more clearly, and more easily find alternatives when responding to others.