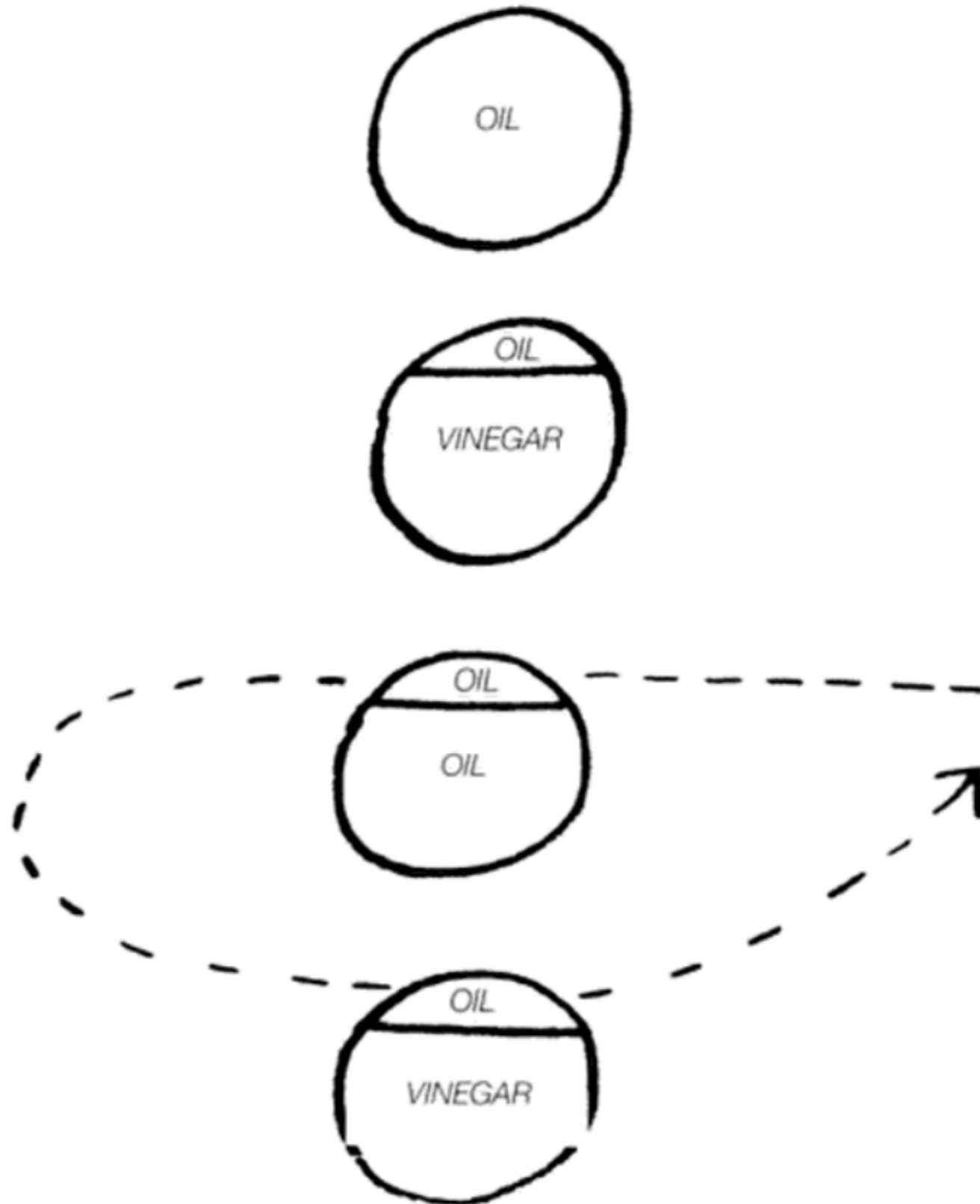


My favourite illustration of the problem of perception is the **oil** and **vinegar** problem (which I have used elsewhere as the wine and water problem). You are about to make a salad dressing and have before you a glass of **olive oil** and a glass of wine **vinegar**. You take a spoonful of **oil** from the **oil** glass and pour it into the **vinegar** glass. You stir thoroughly and then take a spoonful of the mixture and put it back in the **oil** glass. You stop at this point. Is there now more **oil** in the **vinegar** or **vinegar** in the **oil**, or what? (It does not matter but we can suppose the spoon to be less than one-fifth the volume of the glass.)

I wrote in an earlier book, *The Use of Lateral Thinking*, that it seemed to me there would be as much **oil** in the **vinegar** glass as **vinegar** in the **oil** glass. My publishers were highly sceptical of this assertion. After publication a logician wrote politely to point out my error. He said that the spoonful of **oil** was a spoonful of pure **oil**. The return spoonful was a spoonful of mixture and hence contained less **vinegar** than the first spoon had contained **oil**. So there should be more **oil** in the **vinegar** than **vinegar** in the **oil**. The logic seems impeccable. But the perception is faulty.



A different way of looking at the matter is shown above. The two spoonfuls are of equal volume. The first spoonful contains pure **oil**. The second spoonful contains a mixture, which is shown by letting the **oil** float on top of the **vinegar**. But where has this small amount of **oil** come from? Obviously from the **vinegar** glass. But that glass contained no **oil** in the beginning. So the little bit of **oil** must have done a round trip: travelling across in the first spoonful and back in the second. It ends up where it started, so we can forget about it. If we now subtract this same amount of **oil** from both spoonfuls we must be left with equal volumes in each: in one case a volume of **oil** and in the other a volume of **vinegar**. So the exchange of **oil** and **vinegar** must be equal. It matters not at all how much **oil** comes back. In fact it does not even matter if the **oil** is never stirred into the **vinegar** glass.