



# How to use Mental Games

## *A Daily Practical Guide*

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Peak-performance Multimedia Psychointeractive Software

Version 2.6

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*Note: this training programme is now incorporated directly into the Mental Games software and database system.*

In this section of the manual I will outline an effective method of proceeding with Mental Games training.

Some of my research on biofeedback has contributed to the concept of psycho interactivity. The seminars I have presented have also been a continuous source of new ideas and practical observations. I believe this concept would never have been developed to this stage without intense communication with "users".

I have included suggestions regarding which training modules you can use to support your efforts in case you are not achieving positive results. Also I will explain to you why a specific module has been developed and what it can contribute to your mental abilities.

The whole procedure will be described as a daily training over a period of 2 weeks for about 15 – 30 minutes daily – which can be completed in one time block or split up into several sessions; as with any other discipline, continuous mental training will reward you with the best results.

## Day 1

### Preparation

Begin with Level 1, stage A. Before starting, select the background scenes, the flying objects and one of the sounds to personalize your training environment. First try with the default sensitivity of 7 - a good starting setting. *Time Scale* has no function in the stage A.

#### ***Exercise I      First run – Relaxed Focus      10 min***

Your goal in this exercise is to relax your body and concentrate your attention.

Observe the flying object and your inner state, your thoughts coming and going. Try to find out the connection between your mind and the multimedia representation of your physiology—that is, what are the subtle changes in how you feel when the object moves higher vs. lower. A simplest way to activate your physiology is to take three consecutive breaths or think of something which has been bothering you. Notice that the object will move higher when you do this.

You may use any of the traditional methods offered by “progressive relaxation training”, meditation or (which I like to encourage) through personal observation. In this way you will find the relaxation technique which works best for you. Biofeedback is like a mirror, reflecting your inner state.

## Comments

### ***Why relax and concentrate at the same time?***

Several years ago I had a student in mathematics who was interested in biofeedback training. I connected him to a ThoughtStream and he tried to change the color of the display LEDs from red to green. After he was finished I put the electrodes on my finger and I continued with mathematics. I was explaining to him some aspects of the linear algebra, from the matrix calculus. I was surprised to see the display of the ThoughtStream going more and more into the green the more I immersed into the abstract thinking and calculations. Until then I had believed that high mental performance must be correlated with some stress. But at that moment it became clear to me that exercises such as crossword puzzles can be tools for relaxation and concentration as well.

Your skin resistance will increase when you relax and the flying object will descend. But eventually, as you become more relaxed, other thoughts will appear. Perhaps they will be about unaccomplished tasks, or simply "mind chatter". When these thoughts enter your mind you will produce more adrenaline and your skin resistance will decrease because of the stress induced by that adrenaline. On other hand when you stay focused but relaxed, no distracting thoughts will push you up into stress. In this sense an optimal state for learning and performance must not be always accompanied by stress. The state of being relaxed while concentrated I call **relaxed focus**. As we will see in later exercises in Level 2, this can be a very active state.

***Exercise #2***

***Observe 10 min***

Try to land on the platform. Observe your breath while you are relaxing, remaining focused on the flying object and your breath.

### Comments

It is natural that the object will escape upwards just before it touches the landing platform. This is because the feeling of expectation invokes stress. I have observed some people repeat this sequence 10 times until they succeeded.

If this exercise was too easy for you, set the sensitivity to a lower value.

If the object did not move much up and down try to set the sensitivity to a higher value. More sensitivity means more reaction in both directions. The object will more respond to the changes of your GSR values.

## Day 2

### *Exercise #3      Relaxing in Time    20 min*

Start with Level 1, Stage A as in the Exercise #2 but try this time to reach the landing area in the Stage B. The object will move also horizontally and your goal is to land before the flying object reaches the right side of the screen!

### Comments

The horizontal movement introduces a stress to your system. You do not have just plenty of time to relax as in the Stage A.

This time you want to reduce your stress in a given time of period. If you do not manage to land in the first run, you will have to repeat the Stage B again. Also you will have to relax even more as in the Stage A. In this exercise the "Time Scale" controls the speed of the horizontal movement. Adjust it to a comfortable value. As with the "Sensitivity" the

red. This may be the case when you take off the sensors before you stop the session. An ideal progress situation would be that the Max Relax value will increase in the time of your training. But please remember that not always maximum relaxation was the goal of the exercises!

# MENTAL GAMES Levels I and II

## Peak-Performance Multimedia Psychointeractive Software

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- ? Can you think of situations in your life where you can use the strategy of emotional balance?

## Day 13

On the 13<sup>th</sup> day, not because I am much for superstition, but just it our penultimate training day together, you are welcome to use any module or modules you like: it is free exercise day.

## Day 14

### *Exercise 19*      *last control 20 - 30 min*

Go back to Level I and using the last settings go through Stage A, B, C and D two times consequentially. Print and save the plot and the scores. Compare it with the plot and scores from exercise #7 of the 5<sup>th</sup> and 6<sup>th</sup> day.

### Comments

#### Why “Last control”?

Comparing the exit scores from the Level I and Level 2 gives you opportunity to see if you are better now in the classical biofeedback environment, after playing with a range of psycho interactive modules. I hope very much that you are better now than on the first day entering Level I or on the 6<sup>th</sup> day leaving it.

Now go back to the “Entry” and select “Progress Data Base”. We will take a look at your 2 weeks results.

The first screen that is being displayed is “Max Relax”. Each point shows the maximum relaxation in % for every session you have done. Sometimes it may be out of range 1000% and then it is displayed

value is being memorized by the system until you are ready for the next change.

## Day 3

**Exercise #4**      Targeting relaxation level 20 min  
Again start with the Level 1, Stage A as with Exercise #3. When you reach Stage C, you can only land on the marked area in the right bottom corner of the screen. When you miss the marked, pulsating spot you will have to repeat the last stage again.

### Comments

In Stage C it is possible miss the goal by relaxing too much! The purpose of this training module is to reach a certain relaxation and focus level and keep it constant for a while. If you relax too much the object will go below the landing spot, so consciously try to increase your arousal level.

Experiment with your thoughts or breathing techniques to find out how it feels changing your GSR response up and down.

It is quite easy to energize yourself by taking several, fast and consecutive breaths, use it as an “emergency” technique only - otherwise you may cheat yourself and falsify your real training progress. Instead of accelerated breathing use your mental powers to control your GSR response.

If you miss the landing area - for in the first run it may happen, and so feel slightly frustrated. Notice how this frustration corresponds to changes in your GSR.

This phenomenon we will observe more in detail in the Level 2 exercises.

You may also start directly with Stage C, clicking on its icon in the left bottom of the screen.

## Day 4

### **Exercise #5**      **Relaxation and Activation 20 min**

Again start with Level 1, Stage A as in Exercise #4. When you reach Stage D you will have to avoid flying into the clouds. The shape of the “cloud free tunnel” is designed such a way that the optimal way is to move downwards first, then upwards. It represents a physiological curve of relaxation and activation.

### Comments

#### **Why first relax and then activate?**

Some people can relax easily but it is difficult for them to energize themselves. It can be very helpful for them to train their activation ability. It is also a natural physiological curve for a short regeneration process and you are welcome to use the Stage D for this purpose only!

In Stage D the settings and play an important role. When you set the *sensitivity* quite low, you will have to change your GSR a lot in order to fly through the cloud free tunnel.

It corresponds to a high relaxation level and to reactivation to the beginning level. Please note which *sensitivity* setting was optimal for you in this exercise.

### **Exercise #6**      **Keeping Balanced 5 min**

Set the *sensitivity* to a value somewhere between 12 and 14 and the *time scale* to 5.

Start directly with Stage D and again avoid the clouds. Since now the system response is very sensitive to your psychological reactions you have to keep them in a narrow band staying relatively calm. This may be a difficult exercise – but one worth repeating!

recognize this specific situation and react immediately the better will be your score. Playing in the positive loop mode will give you slightly more time when you focus and relax but only as an average. The single turn is still random. Expectation may drive stress and disturb your reaction capabilities. Here, like in the “Focus” module you can learn to react faster and not to “overdrive”.

## Day 12

### **Exercise 18**      **Learning emotional balance 20 - 30 min**

Select “Balance”, positive loop mode from the Level 2, in the “Custom Area”. Set the “time scale” to 15 and the “amplify” to 5. Try to keep the arrows balanced for 5 minutes first. Repeat with this setting two times.

Then set the “time scale” to 5 and the “amplify” to 10 and run for 5 minutes the module. In the last run try to relax, very slowly, without bringing the arrows out of the balance.

### Comments

#### **Why “emotional balance”?**

Emotional balance is the capability of preventing your psychophysical system, represented by your GSR, from making rapid changes. In this sense you can learn to stay at one arousal level for a longer time or at least make changes very slowly, so that your inner system has enough time to adapt. This is just another strategy: stability.

*Questions:*

- ? Can you relax slowly?
- ? When do the arrows go out of balance?
- ? How do you react when the arrows go out of the balance?

to 2 or 4 or even 8 when needed, and the “amplify” to 4. Play one or twice the game.

## Comments

### Why “patience”?

Patience is a mental virtue and you can learn it. In this module, because you are working with positive loop, it is important not to excite yourself each time you make a wrong decision and have to start again. Imagine that your psycho physiological reaction in case of your mistake or your failure must not be connected with inner excitement and its possible consequences. Instead of getting red face or wet hands, loosing your head, making more mistakes and so on, you can manage to stay relaxed and focused.

*Questions:*

- ? How does it feel to you when you make a mistake?
- ? Can you see the typical excitement peaks in the GSR plot each time you made a wrong choice?

### *Exercise I7 Quicker reaction time 10 - 15 min*

Select “Reaction 2”, positive loop mode from the Level 2. Set the “time scale” to 2 or 4 or even 8 when needed, and the “amplify” to 4. Play one or more times the game.

## Comments

### Why “reaction”?

Here you have chance to learn to react as quickly as possible. In the “Reaction” module five identical objects screen appear on screen. The faster you

## Comments

### Why emotional Balance?

These are the first steps in training not only changing your stress level in a desired direction but also maintaining that mind state. This will give you a feeling of emotional stability as you learn not to react or overact to inner or outer stimuli. A more advanced exercise you will find in the *Custom Area* of the Level 2, *Balance*.

## Day 5 and 6

### *Exercise #7 Deep Relaxation 30 min*

Set the to a value 1 or 2 points lower as you have done it in the Exercise #5. Now starting from the beginning try to go through all four Stages A, B, C and D with the new sensitivity setting. Print, save or write down your scores from the plot window. You will need it later.

## Comments

### Why lower the Sensitivity?

Doing this exercise will help you to consolidate your understanding about controlling stress, the relaxation process and concentration. Setting the sensitivity lower will help you to relax even more deeply.

You may repeat this training from time to time adjusting the sensitivity one point lower each time. Now you should be able to control your basic psycho physiological response, as measured by galvanic skin response. This part stays in the framework of the traditional biofeedback training and is very important for our next step toward psycho interactivity.

If you have some difficulty fulfilling the training objectives, you can continue with the following exercises, but please revisit this basic part of the training.

## Day 7

### **Exercise #8          Digits          10 min**

Switch to Level 2 and select the red ball in the left upper corner for "Digits". Start with the first level of difficulty ("Digits 1"). Try to relax while focusing on the task of clicking the numbers in sequence. In case you have finished in less than three minutes proceed with "Digits 2", otherwise repeat "Digits 1". Observe your stress level corresponding to the sensomotoric activity and plot it after each session.

### **Comments**

#### **Why sensomotoric activity in "relaxed focus"?**

The algorithm for personal scoring in this and most of the other sensomotoric modules includes your time required for accomplishing the goal, your total average GSR change, and when required, the level of difficulty or any other module's specific parameters. It means that your score will be higher when you accomplish the goal in shorter time and you relax as much as possible while performing the task. In some cases it may happen that you score a better time, but because of increased stress your total score may be lower as when you do just in a slightly longer time but let's say, relax in average 50 %!

The idea behind this scoring algorithm is as follows: We tend to feel stress when we have to perform a task while being timed. In emergency situations this "fight or flight" response makes perfect sense. But is

### **Exercise 15          Negative versus positive loop**

**15 - 25 min**

Select "Drops 3", negative loop from the Level 2. Set the "time scale" to 16 and the "amplify" to 4. Do not use the basket in this exercise, just let the drops fall down.

Close your eyes and relax. The drops will fall more frequently the more you relax. When the game is over switch to "Drops 2", positive loop. Now your goal is to extend the game of the falling drops as much as possible. The more you relax; the drops will fall less frequently. You may repeat this cycle of negative vs. positive loop several times.

### **Comments**

#### **Why "Negative versus positive loop"?**

We tend to get stuck in one strategy. Choosing one time negative loop and just shortly afterwards the positive and then negative again breaks our inner patterns, making them more flexible.

*Questions:*

- ? How does it feel to you when the drops sound more frequently in the negative loop mode when you relax?
- ? How does it feel to you when the drops sound less frequently in the positive loop mode when you relax?
- ? Which pattern is more comfortable to you?
- ? Can you switch your preference pattern/strategy if there is any?

## Day 11

### **Exercise 16          Learning patience          15 - 20 min**

Select "Virtual Dance", positive loop mode from the Level 2, in the "Custom Area". Set the "time scale"

### Questions:

- ? Can you relax with your particular memories, or they are still making you angry, sad or frustrated, taking energy away from you?
- ? Are you indifferent toward them or do they still excite you in a positive or a negative way?

## Day 10

### **Exercise 14 Negative loop 10 - 15 min**

Select "Insects 3" from the Level 2. Now you will play with the *negative loop*: the speed of the objects will increase when you concentrate and relax, or decrease when you get stressed. Set the "amplify" at 4 and the "time scale" at 2 or 4. Run the "Insects 3" several times after another. When the insects are running too slow or too fast for you adjust the "time scale".

### Comments

#### Why "negative loop"?

In this exercise we have the opposite situation than in exercise #12, "Positive loop". Here you can train and adjust your "maximum" sensomotoric efficiency. You can train to play faster, more focused and more relaxed!

This loop is also ideal to start first with for those who have difficulties playing the positive loop: overreacting, hyperactive children or adults.

Also you may use the negative loop for learning to excite yourself in order to win. Set the "time scale" to 1 and the "amplify" to 4. Now you can win only if you get really angry! For some people it may be harder than relaxing.

it really required for a mental activity? Can it possibly be the case that this kind of stress, caused by too much adrenaline, may prevent you from being focused? The answer is of course yes. Other examples of this counterproductive response include "drawing a blank" while taking an important test, and "burnout."

Your energy is not limitless, and this training program will provide you with tools for personal energy management.

Now, imagine you are able to control your adrenaline level consciously. Then you may choose an optimal strategy for performing a given task. If this is a mental task, requiring much concentration, your strategy may be to accomplish it a state of the relaxed focus.

Perhaps you were able to observe in this training that the frustration caused by not finding a specific digit made you nervous and your GSR response immediately showed a peak. Try to look for such "incidents" in the future and see how your reactions and the resulting feelings and mental clarity have improved due to this training.

### **Exercise 9 Mandala 20 min**

Select one of the "Mandala" versions and choose a soothing background sound loop. Set "Amplify" to "-2" or "2" and "time scale" to "2". Now observe the Mandala and try to rotate it as fast as possible. At high speeds the mandalas will appear to move in both directions at once. As soon as you feel you can not speed it up much further try to slow it down and then change the direction of the rotation. You may support yourself by selecting a different, more active sound loop. Then after reaching a maximum bring the Mandala almost to rest.

## Comments

### Why speeding up the Mandala in one and then in another direction?

Again, as you have already experienced in the exercise #5, it is important to be capable to change at will your stress and relaxation level in *both* directions.

Most people will find watching the rotating Mandala soothing, inducing a sort of trance-like state.

Originally the Mandala module evolved from the “Entry” screen of Mental Games; a psychologist friend of mine, working in his neurofeedback center in Zurich, asked me to adapt the rotating figures of the “Entry” for his hypnosis session. For this reason the module has “X” setting for “amplify”; there is no relation of the rotation to your GSR change when so selected.

Making the mandalas rotation rate dependent upon stress level was a natural next step. Many persons reported valuable inner experiences while working with this module. I also noticed that it was a favorite with children, which surprised me as I did not expect that this passive module would be very interesting for them, as they often prefer action. One possible explanation is that this simple module comes very close to the experience of psycho *interactivity*, making users engage in the training the more they engage themselves.

The mandalas will rotate faster as you become more deeply relaxed. Focusing your attention on the rotation engages you more deeply in the process. In this sense there is an immediate feedback loop between you and the computer. It will not last forever; it could be even difficult emotionally to go into a deep trance state alone, without having had much previous experience with altered states of consciousness.

with the “Insects 3”, the negative loop first (Exercise # 14) and then return to this exercise the next day. If you are an experienced player already and you can choose the best mental strategy in this module (GSR change of more than 30, Score more than 2000), spend more time on the next exercise instead.

### *Exercise I3*                      *Memories*                      *15 – 30 min*

Select “Music Plot 2”. Start the training with the following settings: 5 for the “amplify” and 30 for the “time scale”. Close your eyes and scan your memory backwards in time from the present towards your earliest memories. Event for event and do not stay too long at a certain episode of your life. Go back further so that you are through in about fifteen minutes. Listen to the change of the sound.

## Comments

### Why another way of GSR evaluation?

The evaluation algorithm of the “Music Plot 2” is slightly different as in the “Music Plot 1”. In the first version it shows you the standard, straightforward way of evaluation: the change relative to your starting value. This value is actually calculated from the first 5 seconds after you clicked “start”, in order to average changes which occur while you settle down. In the second version of the “Music Plot” the change is evaluated relative to the average for the entire session which has run thus far. In this way the system adapts itself dynamically and is able to reveal instantaneous changes.

This makes it interesting for observing emotions. Scanning through personal memories while being monitored in this manner gives you additional information about yourself:

Select “Insects 2” from the Level 2. Now you will play with the positive loop: the speed of the objects will increase when you become stressed, or decrease as you relax. Set “amplify” at 4 and “time scale” at 2 or 4. Try running the “Insects 2” several times in a row. When the insects are moving too fast for you, set the time scale higher to slow them down.

## Comments

### Why “positive loop”?

The definition of a positive biofeedback loop brings us one step closer to the idea of *psycho interactivity*. Now the “computer interface” interacts with your emotional state directly, changing its appearance according to your inner arousal.

The positive loop is a “good loop” to start with. Here you can see what strategy you have chosen for the task of catching the ants, which behave randomly. Many people react initially with stress. Then the situation becomes even worse as stress accelerates the ants and they are more difficult to catch. So what about changing your strategy in this case? Relax and focus first and then start catching the insects!

The voluntary change of the strategy is one of the main keys in energy management. When you are able to react adequately in a stressful situation—that is, in control of emotional responses—you have become more conscious and more fully functioning. You are not longer a slave of your own uncontrollable reactions.

All you have to do is to try several times and suddenly you should feel and see objectively on the screen the change of your strategy. Try to remember the point of mental shift. You may then apply it to real situations.

If you are not able to lower your stress level with the positive loop after more than 10 trials proceed

For example old memories and feelings could emerge to the surface and they may be more than you are ready to deal with at the time. In this sense this Mental Games module is similar to light and sound stimulation at slow frequencies. Luckily we have natural brakes and at some point the trance-inducing “looping” becomes saturated.

When this happens, it is often helpful to return to the starting point, even activate yourself for a short time and then return back to the level you started with at the end of the training.

As described in the first part of this manual, you can use this module for achieving specific desired mental states.

## Day 8

### *Exercise 10*      *Open Focus*      *15 min*

Select “Focus” from the Level 2. Start with the first difficulty level.

Try to find a mental state in which you relax as much as you can and still remain alert and focused. Notice that this time it feels like a different kind of “focus”: I will call it “**open focus**”. In this state the goal is to concentrate on the details without losing your attention to the whole.

When you are finished with “Focus I” proceed with the next two levels of difficulty.

## Comments

### Why “open focus”?

The idea for developing this module came to me while I was studying Modern Arnis, a Philippine martial art. In this discipline it is necessary to make complex movements with special sticks for attack and defense. I had to be able to see the details of my partner’s body and motions while at the same

time “open” my attention in order not to lose his whole body from my sight, including my surroundings. The details were necessary to act in the present and the whole was needed to “predict” our next actions.

Another aspect of this training was very important to me: to stay relaxed and react quickly and precisely. Also each player learns to develop his own special set of movements, typical for his strategies. It was an advantage in the training to recognize and “memorize” partner’s personal set of actions, predict them and then sabotage their strategy.

Out of this experience in the field of martial arts the “Focus” module was developed.

The picture you click on is the current *detail*. Simultaneously you have to be aware of which picture is to be next; changing briefly in a random, unpredictable pattern and you can not lose sight of the “big picture” as well. The goal is to remain relaxed, or the algorithm will lower your total score. And you may work with predictable patterns, trying to memorize at least parts of the linear sequence of the pictures.

My wife had some difficulty to keep her attention open and was become very tense while training Arnis. After playing the “Focus” for some time, she had successfully transferred her knowledge from the “virtual” training to the Arnis.

***Exercise II                  Closed Eyes                  10 min***

Select “Music Plot” from Level 2. Start with the first option.

Close your eyes and listen to the background sound. Relax as much as possible. Note that the feeling of “focus” has a different quality than the others you have explored: I will call it “inner focus”. You can concentrate on inner thoughts, feelings and body sensations. The only feedback is through the

auditory channel as the sound loops will change according to your GSR response.

## Comments

### Why “inner focus”?

Here again my neurofeedback friend from Zurich gave me precious remarks and expressed his interest for a module, which would enable a long time monitoring on a single screen. The therapist should be able to see the plot and the patients just have access to auditory feedback about his GSR level.

Here we are experiencing “classic” biofeedback with a simple form of feedback. But nevertheless it is a very useful tool for working with inner states. Some people will find it easier to relax when they close their eyes.

It may be also very valuable for you to have some feedback about your inner excitement while you are doing progressive body relaxation training, mind machine session or meditation. Just notice how different the GSR responses are when you focus your attention away from the surroundings towards yourself.

#### Questions:

- ? How does your GSR change when you visualize something soothing, something very exciting but pleasant, something making you angry?
- ? What about the attack and decay of your GSR curve in those situations?

## Day 9

***Exercise I2                  Positive loop                  15 min***