

GIMP's IWarp

Documentation

Interaction Design for the Real World

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assignment

The GIMP-filter IWarp has to be improved. To work with it has to be easier and faster and has to give the user the possibility of more creativity and freedom. The final solution has to be integrated fluently in the workflow of GIMP.

functionality

The IWarp-filter deforms parts or pixels of an image.

deform modes: move, remove, grow, shrink, swirl ccw, swirl cw, smooth

parameters: radius, amount

functions: undo (give the user the possibility to go back step by step)

pressure (there are pressure-sensitive graphics tablets, this new input option has to be used well)

circular cursor

user scenario

Scenario no. 1: photomodel

(improve the reality and sell it as real)

In the postproduction of commercial people photography, the real person gets improved. For example making the hips narrower, the eyes or the mouth bigger or the nose straighter.

The major changes are made with a big radius, which are followed by fine improvements.

Scenario no. 2: phantasy

(creating unrealistic characters, e.g. „The Red Queen“, „Alice in Wonderland“)

In the postproduction of phantasyphotography you have to be able to change everything. For example the picture of the „Red Queen“ from the movie „Alice in Wonderland“. The first step is to work big and make the major changes like the proportions, afterwards you make the fine changes like improving the edges.



Scenario no. 3: art

(e.g. action painting)

In the work with art you are very free and creative, you can combine tools, work and play with them.

expert evaluation

We had a look at the GIMP-filter IWarp, and also compared it with the Photoshop-filter Liquify. Both work with these filters in an extra box. You have to click several times until you can use the filter. This should be really improved. IWarp is used very often and it has to be easier to reach.

There are some possibilities in Liquify, you don't have in IWarp, for example using masks, zooming in and out, going back step by step, and by a circular cursor, you can see the radius of your mode. These options make working really faster and easier and they should be also integrated in the IWarp-filter. The possibility to zoom in and out makes it easier to work on several parts of the picture. Until now it is feasible to do that with a selection but this is really uncomfortable and interrupts the workflow. Furthermore it is very important to give the user the opportunity to go back step by step instead of going back to the basic picture. When you have a lot of steps, it is very annoying when you have to go back and do all the work again, just because of one mistake. To see the radius while using the IWarp-modes is also necessary. The user has to see how much of the picture he is going to change.

There is also an option missing to smooth the edges, what can be necessary when you work with several modes.

Because many users work with a graphics tablet, the possibility to use pressure should be added. These users want to benefit from their tool, and that is why there should be the opportunity for them to adjust that on their own.

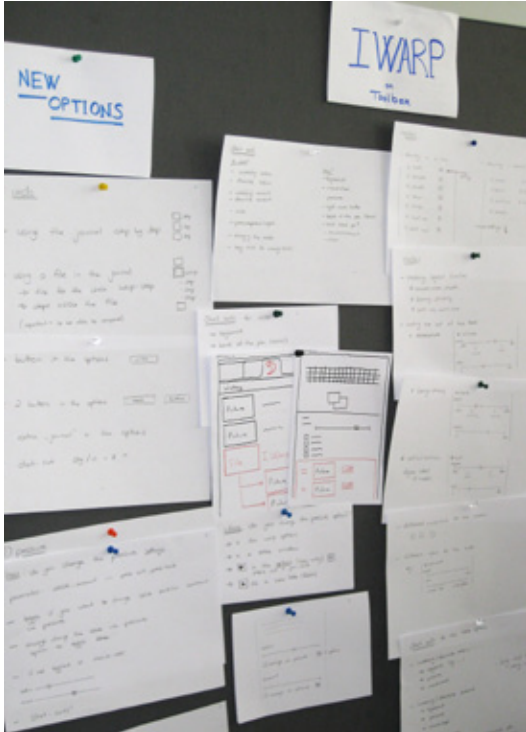
Other options which are not necessary have to be removed, like the bilinear-option, the adaptive super-sample and the whole animate-tab.

The IWarp-filter is much faster than Liquify and easier to understand, what has to be maintained.

At the moment working with the IWarp-filter is easy to understand and it works fast, but it disturbs the workflow and is rather uncomfortable. The user should be able to work fast, creative and stay in the flow of GIMP as IWarp is a natural part of it.

brainstorming

We worked on the problems and developed a lot of ideas to solve them and create a design. The further pictures can give you a brief glimpse.



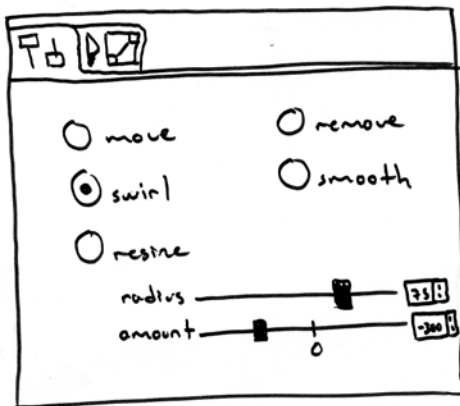
final design

the tool IWarp

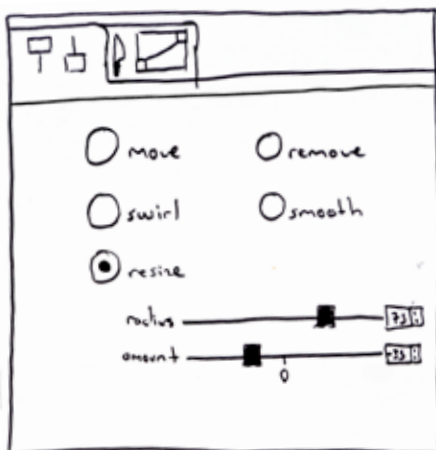
To make IWarp easier to reach and faster to work with, it becomes a tool in the toolbox. Via using a tool, some possibilities are given, without a change. The user can work like he is used to, with the zoom-tool or the selection-tools. Like that, the operator will feel no difference when he works with the IWarp-tool in comparison to others. The improvement of the workflow will be to his benefit.

toolsettings

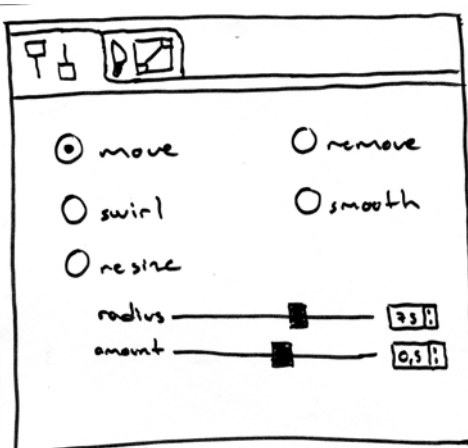
In the toolsettings the user can see the different available modes of IWarp and two parameters to influence them, the radius and the amount. The modes can be chosen by toggeling the circle in front of each mode. For the option to change the radius, the design of the scale will stay the same. Because some modes are combined in one now, the scale for the amount has to be different.



It makes working easier, faster and more logical to combine swirl-cw and swirl-ccw in one mode called swirl. By changing the amount from a negative to a positive value, the user changes the direction of the swirl-mode. The scale reaches from -360 to 360. To measure in angular degrees makes it easier to understand how the swirl-mode changes the picture.



For the same reason grow and shrink are combined in one mode called resize. The concept to change from shrink to grow is the same. There is a scale from -100 to 100. The negative values are for shrinking, the positive values for growing.



The other modes are move, remove and smooth, which all have the same scale from 0 to 1 to change the amount.

shortcuts

To improve the speed of work, there are shortcuts for each mode, for increasing and decreasing radius and amount. This is a benefit to the workflow. The user can avoid the tab of the tool options by controlling the settings with shortcuts.

The radius and the amount controller can also be changed by the mousewheel, as long as the cursor is on the corresponding scale. This is a possibility GIMP offers for other tools, so it has to work for this tool as well.

Also for the graphics tablet user, working should be as fast and easy as possible. For that reason you can use the backside of the pen as a short way to work with the mode remove. This works, referring to the analog pen, like a rubber.

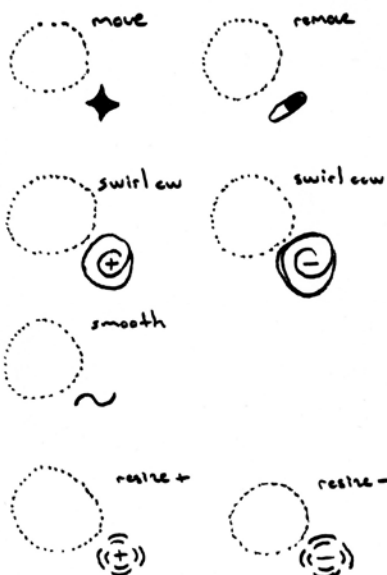
shortcut-system for the tool options:

move	alt+1
swirl	alt+2
resize	alt+3
remove	alt+4 / backside pen
smooth	alt+5

increase radius	strg + / mousewheel
decrease radius	strg - / mousewheel

increase amount	alt + / mousewheel
decrease amount	alt - / mousewheel

cursor



The cursor has to be circular, that the user can see how big the part is, he is going to change.

To make clearer which mode he is using at the moment, there are seven cursor icons. That makes it easier to know which mode is active and to avoid that the user has to check the tool options. Work becomes faster and more comfortable.

This is also very important for the work with shortcuts. The user should be able to work most of the time without checking the tool options. He presses a shortcut and because of the change of the cursor, he can immediately see, which mode he is using.

pressure

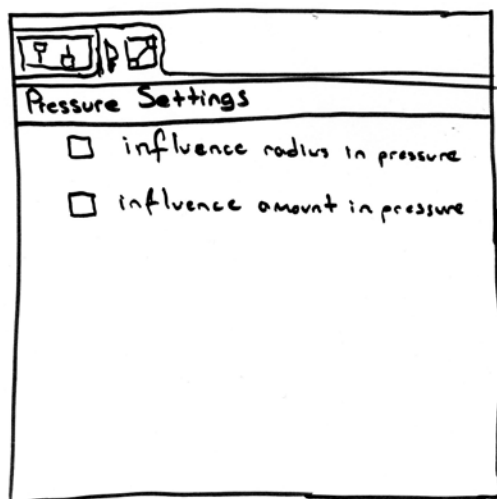
Like already mentioned, a lot of users work with a graphics tablet. To make sure, that these people can benefit from their tool as much as possible, the pressure has to be incorporated.

Pressure can be used to control the radius and/or the amount. To give the user as much freedom as possible he is able to choose on his own which part he wants to manage via pressure.

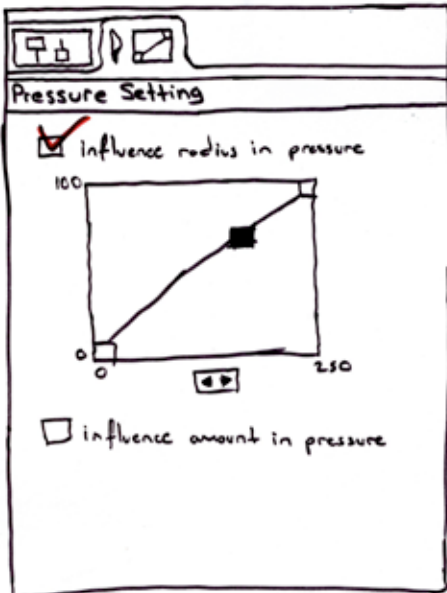
Because not everybody uses a graphics tablet, and there are many users which cannot benefit from these options, they don't appear in the normal tool options. There is a separate tab, which can be reached like the other tabs in GIMP. When you see the tool options, there is the configure tab where you have the possibility to add one. Once done, it is very easy and fast to choose the tab and change the pressure settings.

pressure settings

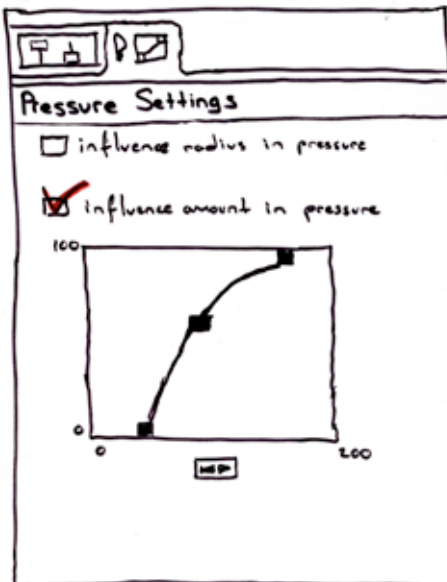
Professional users want to work free, creative and individual. That is why there have to be enough possibilities to modify the pressure settings, but not too much, to avoid confusion.



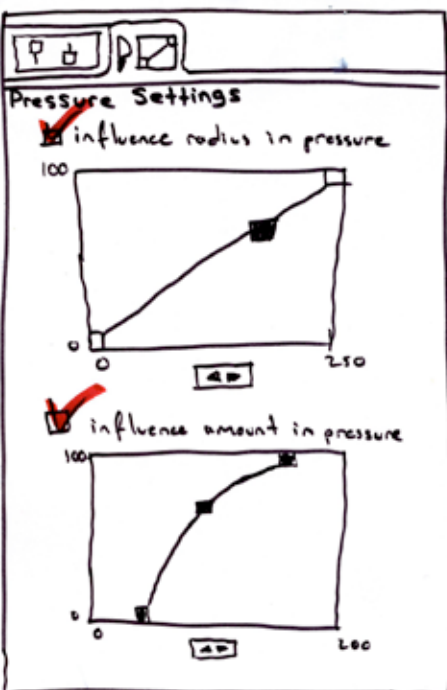
The user can choose which parameter he wants to handle via pressure, either the radius, or the amount, or both.



When he toggles one option, the settings appear as graphs. If nothing is changed the slightest pressure causes the smallest radius or amount and the strongest pressure causes the biggest radius or amount.

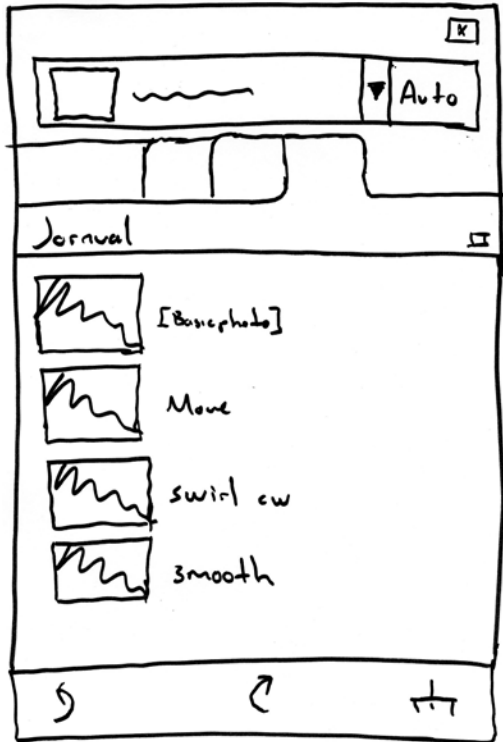


There are several options to modify the graph, so that the user can really benefit from these settings. There is the possibility to reverse the radius or amount axis to get the opposite effect. You have also the option to modify two anchor points or to add anchor points via click on the graph. Like that, the user can limit the effect or make the graph flatter or steeper.



undo

When professional users work very long and intensive with a tool, it is absolutely essential for them to have the possibility to go back step by step. Otherwise the whole work would be useless after one mistake. The user needs the freedom to test different ways and different creative solutions.



This is the task of the undo function. This function has to remember the last steps and allow the user to go back to them. If you have a lot of different, small steps, and you work very fast you might lose track of the single steps. It is very important, that the user can see which step he is undoing. If you made a mistake it has to be possible to undo it with one click or shortcut.

To make this function as comfortable as possible we decided to integrate it in the existing journal. The user is familiar with the handling. There is no need for an extra window what saves space.

shortcuts

Of course there have to be shortcuts for that, but these already exist in the journal.

undo	strg + z
redo	strg + y

further ideas

To have each step of the IWarp-tool in the journal is a good improvement. But we think that the whole journal could work even better with a further solution. The user should also be able to compare the basic picture before he used the tool, and the picture after finishing the work with each other. It would be very comfortable to have tool sessions for this case. If you start to work with a tool, the session would automatically be built in the journal. Inside the session you shall see every step. When you finish your work with one tool the steps would disappear. When you double click on the session, you will see each step you made. The user will have a good overview about his work steps and would additionally have the possibility to go back to each step.

