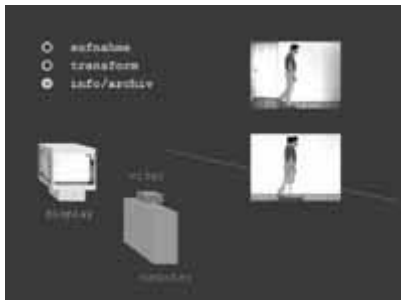


Martin Reinhart/Virgil Widrich tx-transform



tx-transform is a new film technique that transposes the time axis (t) and the space axis (x) with one another in film. Familiar cinematic conventions are thus turned upside-down: space becomes time and time becomes space. Normally, each individual frame of film depicts the entire space but only a moment in time (1/24 second). With tx-transformed films, it is just the opposite: each frame shows the entire time but only a tiny portion of space (the left side of the picture is "before," the right side is "after").

Martin Reinhart has been working since 1992 on the development of a process that, so to speak, inverts the system of filmic order and makes it legible transversely to the axis of time. Through this shift of perspective, it becomes apparent that there are a number of other alternatives to conventional space-time reference that can be realized in film. With tx-transform, sequences can be produced in which filmic representation is no longer fixed exclusively through the spatial presence of an object; rather, its form depends upon a complex interplay of relative motions. Accordingly, an object on film is no longer defined as the likeness of a concrete form of existence, but rather as a condition over time.

The Depiction of Motion in Film

Everything that provides information about the recording of motion in the media of film and video is arrayed along a linear band. In our imagination, this filmic time-band coincides with our experience of reality. Indeed, manipulations of its direction (reverse play), division (cuts) and extent (time-lapse, slow motion) do not coincide with this experience, but appear to us to be practically a matter of course and are employed in almost all areas of film production.

The concept of motion in a filmic system is defined as the change of a condition over time. If an object at rest is filmed, it basically does not matter whether the film is running in reverse or extended mode, or if a cut has been made, either during shooting or playback; the result will always remain the same. Motion in film is only recorded motion relative to the division of the film into frames. In this case, "relatively static" means that the relation between the object being filmed and the lens remains unchanged, that a fixed axis exists between the signal and

the recording of it. Accordingly, it can be said that motion within the borders of a frame can be perceived only if there is motion either of the object in relation to the camera or of the camera in relation to the object — in short, if there is relative motion.

Precisely in this case of film, it can be simply illustrated that one further motion is necessary in order to create the illusion of movement: the film has to run through the projector. The motion of the film itself allows for only one direction: from the first to the last frame of a reel. This informational structure along a temporal vector can also be conceptualized as a stack of images such as the flip-book, a children's toy featuring bound pages showing sequential pictures which, when rapidly riffled with the tip of the thumb, produce the illusion of motion due to the quick succession of individual layers of time. Like a reel of film, this toy contains the totality of all spatial aspects of motion, and can be understood as an "information block." Normally, this block is riffled from front to back along the time axis to create the illusion of filmic motion.

tx-transform is another sort of cut through this "information block," but along the space axis instead of the time axis. Upon initial consideration, it may seem highly improbable that these "space cuts" could lead to discernible images, to say nothing of perceptible sequences of motion. But that is by no means the case. The consequence of these "space cuts" through the "information block" is a series of astounding visual effects: houses start to move, heads grow out of themselves, moving trains become shorter and shorter with increasing speed, and much more.

In contrast to conventional films, the specification of the motion of the camera and/or the object takes on substantial importance in tx-transformations. In order to be able to use material captured on film for the production of tx-transformations, a number of different parameters must be precisely conformed to and a variety of criteria with respect to the relative motion of the camera and the object must be fulfilled, whereby the standard procedure of omitting an unsuitable segment (cutting it out) is impossible since a single faulty image in the raw footage would have consequences for the effect of the entire sequence. Nevertheless, the result of a tx-transformation can appear to be completely abstract or completely realistic, depending on the type of shot being made. (However, shooting for a tx-transformed film — by a crew equipped with conventional capacities to perceive space and time — initially proves to be extremely difficult ...)

The Interchangeability of Space and Time

Einstein, in his theory of relativity proposed during this century, showed that there exist other, less stable conditions beyond our perception. The reason why statements in accordance with this theory often seem paradoxical to us is that they are clear contradictions of our experience of time. Bertrand Russell, the British logician, philosopher and writer (1872—1970), in his book *The ABC of Relativity*, provided numerous graphic examples that bring out the key significance of one's standpoint for the process of measuring time. According to Russell, one conclusion to be drawn from Einstein's postulate is that there is not only one stable space-time system of reference, but rather countless such systems. Each one of these systems can, in an objective sense, claim to be a correct measurement of time — though with the proviso that the particular data is valid only for the respective individual system.

In order to call into question common perceptions of "clocks and rulers," Russell constructed in chapter 4 of his book the following example which portrays the basic content of the film tx-transform:

" ... Let us assume that, on a foggy night, two men who belong to a band of criminals shoot the conductor and the engineer of a train. The conductor is standing at the end of the train; the gangsters are standing alongside the tracks and shoot their victims at close range. An old man standing precisely in the middle of the train hears both shots simultaneously. One would therefore say that the two shots had been fired at the same time. However, a stationmaster standing exactly in the middle between the two gangsters first hears the shot that kills the conductor. An Australian millionaire, an uncle of the conductor and the engineer (the two are cousins), willed his entire estate to the conductor, or to the engineer in case he were the first to die. Thus, enormous sums are riding on the question of which of the two died first. The case comes before the Upper House, and both parties' lawyers — all of whom studied at Oxford — agree that either the old man or the stationmaster must have erred. Actually, it is quite conceivable that both could have been right. The train is moving away from the shot fired at the conductor and is moving toward the shot fired at the engineer; therefore, the sound of the first shot must travel a greater distance to the old man than the sound of the second one. Thus, if the old man is correct in maintaining that he heard both shots simultaneously, then the stationmaster must also be right when he says that he first heard the shot that killed the conductor ..." (translated from: Bertrand Russell: "Das ABC der Relativitätstheorie", Fischer 1997)

So then, the idea of "tx-transform" was to crystallize into the form of a short film the conceptual proximity of the view afforded by the theory of relativity and the new technique of tx-transformation. The point here was not to illustrate Einstein's theory or to argue for an understanding of this technique as an implementation of that theory, but rather to stress the congruencies with respect to content and technique. The most intriguing aspect of this project has been to do justice to the narrative quality of a text by Bertrand Russell using the means of tx-transformation. We see an interesting correspondence in the fact that both the text and the process are based on highly abstract principles and nevertheless succeed in enabling comprehensible images to emerge.

This film project — the first to be completed using this new technique — offers an impression of the manifold possibilities offered by tx-transformations, which could be employed in countless other areas within the field of filmmaking (such as scientific films, science fiction films, advertising and pop videos).

More detailed information is available in the Internet at

Screenwriter & Director: Martin Reinhart, Virgil Widrich

Cast: Enrico Jakob, Heinrich Kröncke, Florian Ladstätter, Horst Mayer, Hans Reisinger, Tommy Reisinger

Camera: Theo Ligthart

Lighting: Martin Putz

Music: Hermann Langschwert

Producer: Virgil Widrich Film & CD-ROM Production

Funding: Chancellor's Office/Art Section, City and Province of Salzburg, City of Vienna

Technical Data: 35 mm, Cinemascope, black/white, sound, 5 min.