CONTENTS

FOREWORD INTRODUCTION	1 2
	I/ DEFINITIONS AND BASICS
1. A FEW WORDS ABOUT IMMERSION	6
a. Different levels of immersion b. A new type of cinematographic immersion	6 7
2. INTRODUCTION TO STEREOSCOPY	10
a. Human binocular vision b. Overview of stereoscopy c. The immersion through 3D d. Limitations of live-action 3D e. « Virtual » stereographers	10 11 12 14 16
3. PRINCIPLES OF ANIMATED CGI	17
a. A non-photographic virtual world b. The malleable image: a complete control over the c. The moving matter: interactivity	medium 17 20

II/ STUDY OF AN IMMERSION THROUGHOUT THE FILMMAKING PROCESS

1. THROUGH THE NARRATION	26
1.1 THINKING AND WRITING IN 3D	27
a. 3D authoring	27
b. Scoring the <i>depth script</i>	29
c. Supporting the story	29
1.2 New NARRATIVE AND VISUAL STRUCTURES	31
a. From script	31
bTo visual design	33
1.3 MAKING THE MOST OF 3D CGI: CREATING IMAGINARY	
ENVIRONMENTS	36
a. Parallel worlds	36
b. Specific universes	37

2. THROUGH THE MISE-EN-SCENE

2.1 THE DEPTH OF THE VIRTUAL SPACE	39
a. Towards a new scenography	40
b. Playing with scales	42
c. Multi-rigging	44
2.2 THE TOOLS	45
a. The « perfect » camera	45
b. Rethinking focal lengths	47
2.3 "FRAMING" IN 3D	50
a. The impact of the layout process	50
b. Stereo window, screen edges and floating v	window 52
c. The flexibility of the medium	56
2.4 THE IMPACT OF MOVEMENT	58
a. Movements of the frame	58
b. Movements in the frame	62
2.5 PLAYING WITH FOCUS: MAKING THE EYE TRAVE	L 67
a. Slowing down the image and the edit	67
b. Dealing with depth of field	69

3. THROUGH THE NATURE OF THE IMAGE

3.1 Rendering the matter	73
a. Textures and materials	74
b. Sets, ambiance and atmospheres	80
c. Carving the matter	81
3.2 A SENSUAL, FLOATING, AND CINEMATOGRAPHIC IMAGERY	83
a. Hapticity of the image	83
b. The other senses of immersion	86
c. When the screen vanishes	90
3.3 THE IMPORTANCE OF DETAIL	95
a. Background questions	96
b. Complexity and abundance of the image	99
3.4 The realism paradox	103
a. Getting inspiration from reality	103
b To help standing out of real representations	108

GENERAL CONCLUSION

114

72

38

BIBLIOGRAPHY

OTHER THESIS AND LECTURES NOTES	117
BOOKS AND PDF DOCUMENTS	117
PERIODICALS AND WEB ARTICLES	117
FURTHER READINGS	119
VIDEOS, PODCASTS & CONFERENCES	119
INTERVIEWS & EMAILS	119

FILMOGRAPHY

STUDIED MOVIES	120
Q UOTED MOVIES	120

TABLE OF ILLUSTRATIONS

LISTED ILLUSTRATIONS

121

	APPENDIX A – DOCUMENTS	
A1 - A depth script example	124	
A2 - Movies featuring 3D environnements	126	

A3 -SURVEY UP3D – ALLOCINE : THE POP-OUT EFFECT 127

APPENDIX B – INTERVIEWS

B1 - NICOLAS DEVEAUX – CUBE CREATIVE	129
B2- RODOLPHE CHABRIER – MAC GUFF ILLUMINATION	135
B3 - Stéphane Comparetti – Executive toon service	141
B4 -CORINNE KOUPER – TEAMTO	152
B5- Phil "Captain 3D" McNally – Dreamworks (email)	159