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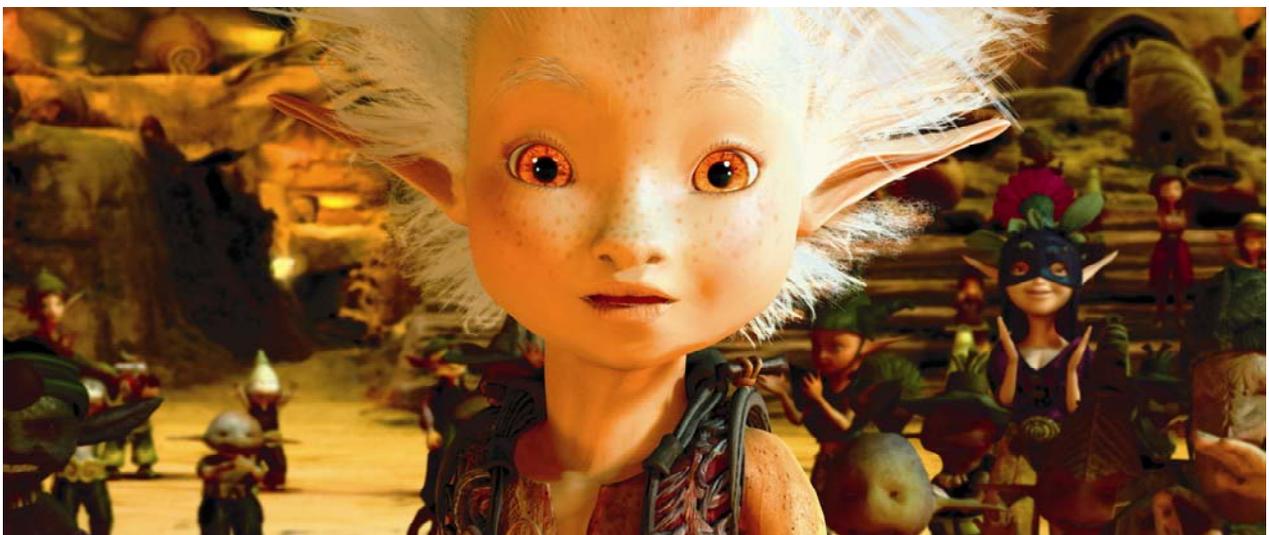
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A FILM BY LUC BESSON

# ARTHUR

AND THE INVISIBLES

*From the creative mind of talented filmmaker Luc Besson ("La Femme Nikita," "The Fifth Element"), comes a larger-than-life, family adventure about a boy who, after his grandfather disappears, sets out to save his family home from emerging real estate developers. Arthur learns that he must follow his grandfather's ancient clues to a vast treasure - and unlock the passageway to a spectacular new world filled with mysterious little people, so tiny they are considered invisible, and enlist their help. But once in the magical land, Arthur must join swords with a beautiful princess and a reckless army of defenders to save the land from the evil wizard. It seems like an impossible task, but as he discovers along the way, sometimes the smallest heroes can make the biggest difference. Using a dazzling new combination of live-action and ground-breaking CGI technology, "Arthur & The Invisibles" is the story about the true meaning of courage and the endless power of imagination. The film stars Mia Farrow and Freddie Highmore, featuring the voices of Anthony Anderson, Jason Bateman, David Bowie, Nate Corddry, Rob Corddry, Robert DeNiro, Emilio Estevez, Jimmy Fallon, Harvey Keitel, Madonna, Chazz Palminteri, Erik Per Sullivan and Snoop Dogg. "Arthur and the Invisibles" was written and directed by Luc Besson and is based on the best selling children's book, "Arthur and the Invisibles."*



ONCE UPON A TIME THERE WAS A LITTLE ELF...  
- Arthur's Story -

A little boy who enters a world of elves - that was the initial idea on which the film was built. Born out of the long collaboration between Patrice and Céline Garcia, that idea immediately inspired Luc Besson. Before writing the script, he wrote and published *Arthur and the Minimoys*, based on Céline Garcia's original idea and illustrated by Patrice Garcia. Three other volumes followed: *Arthur and the Forbidden City*, *Maltazard's Revenge* and *Arthur and the War of the Two Worlds*. Written in collaboration with Céline Garcia, the film script was based on the first two volumes of the saga, which has already been translated into 34 languages and sold more than 1 million copies in France.

**AN INTERVIEW WITH CÉLINE GARCIA**  
co-scriptwriter and inspiration behind the story of *Arthur and the Invisibles*

Visual artist, Céline Garcia has worked with her husband, Patrice Garcia, for over twenty years. She co-wrote with him his comic books, *Allande*, *Les Fils de la Nuit* and *Le Chant des étoiles*.

**Where does the story of Arthur come from?**

The idea for the book came out of a combination of my childhood memories, my father's childhood memories and observing my 8-year-old son. So, three generations of children are the basis for Arthur's story, which also hinges on a grandfather I never knew. When I was a child, he seemed to me a very enigmatic character. I pictured him as a sort of Ernest Hemingway. He was a journalist and had a pretty eventful life, traveling far and wide. So, I used that image of an adventurer with a love of Africa for the character of Arthur's grandfather.

**And the Invisibles?**

The world of elves is a kind of secret garden that Patrice and I shared even before we met. When I was pregnant, we enjoyed walking in the forest and, although it sounds a little crazy, I remember one particular day when a sunbeam gave me the feeling, for about thirty seconds, that I had glimpsed a magical world. That image stayed with me and made me want to tell the story of a little boy who visits that world. I really like the idea of a place where children are as big as the adults, control their own destiny and are capable of doing everything they dream of.

**How did all that lead into a film?**

After seeing Patrice's photos and reading my texts, Luc Besson told us he wanted to make a film out of it! As amazing as it may seem, we weren't sure and asked for some time to think. It all seemed too much. We weren't ready for it. Then, we thought that it was a wonderful opportunity to share our world, especially as Luc proved to be a great listener when we were writing the script together. He added his own story to mine. It was a pretty unique experience.

**And then?**

And then, I have to confess that it was pretty frustrating because five years went by between writing the script and seeing the first images! I didn't want to intrude while they were making the film, so I waited. When I finally saw it, I was awestruck and incredulous. To tell the truth, I still wonder if it's all true, if the film is really about to come out! I haven't fully realized yet. I'm still touched by the euphoria of the day Luc said to us, "Let's make a film!"

## SEVEN YEARS' PRODUCTION IN TEN MAJOR STAGES

### 1. THE IDEA

1999. Luc Besson and coproducer Emmanuel Prévost decide to make a film inspired by a photo sent to them by Patrice Garcia. Very early on, Emmanuel Prévost suggests bringing in BUF Cie, renowned for its expertise in photorealistic special effects, for the film's 3D animation.

### 2. THE PILOT

2001. A short pilot of the movie is shot to test the film's production process. The first large-scale sets are built in studios at St. Ouen, just outside Paris. Patrice Garcia is responsible for directing the pilot and BUF Cie supervises the 3D animation.

### 3. THE STUDIO

2002. Pierre Buffin, a trained architect, finds the site at Pantin, on the outskirts of Paris, which will house everybody working on the film (2D, modelers, 3D) under one roof. The various crews move in two years later.

### 4. 2D

2002. For the next three years, designers develop the film's stunning fantasy world.

### 5. THE STORYBOARD

2003. Patrice Garcia completes the film's storyboard, a vital tool for BUF to establish a schedule and budget for the 3D part of the movie.

### 6. THE SET-UP

2003. 3D artists begin to design the characters, a process which continues in some cases through to the last few months of production.

### 7. LIVE-ACTION REFERENCES

Using a motion video capture technique devised by BUF, Luc Besson is able to apply his experience as a "live-action" director to the animated sections of *Arthur* by filming the storyboard with a group of actors and recording a scratch soundtrack. All these references can then be used to generate 3D CGI.

### 8. 3D MODELS AND SETS

Most of the 3D sets are created by constant collaboration between set designers (who build maquettes) and 3D artists (who photograph them and interpret them in 3D).

### 9. THE LIVE-ACTION SHOOT

Spring 2005. Luc Besson shoots the film's live-action sequences with Freddie Highmore and Mia Farrow. Towards the end of the year, the 3D animators deliver a rough version of the film.

### 10. POST-PRODUCTION

2006. Voices and music are recorded. The film is mixed, rendered and delivered.

## **AN INTERVIEW WITH director LUC BESSON**

*"I truly believe it is essential to respect and cherish our inner child".*

### **Do you consider Arthur and the Invisibles a tribute to the world of childhood?**

For sure. A philosopher once said, "Child is the father of man" - everything we know, we learn from our experiences as a child. So I think it's only right to respect and cherish the child within us. It's interesting to note that children have deeper bonds with and more respect for nature than supposedly more developed adults.

### **How did Arthur come into your life?**

Patrice Garcia and his wife Céline came to see me with a proposal for a TV series. They had written a short script based on a story about little elves. It was the first time I saw drawings of Arthur, although that wasn't his name back then, and the Invisibles. I found their universe quite fascinating but I wasn't inspired by the idea of a series, so I suggested giving it a shot as a feature film. That seemed too ambitious for them and they asked for some time to think, which was quite understandable because a feature film meant going from a small-scale project to an enterprise involving 350-400 people, with the risk of losing the treasured personal touch that it had in the beginning. In the end, they decided to go for it and we set out on an adventure that lasted four and a half years!

### **What was the first stage in making it a reality?**

Once we had made the decision to shoot a feature film, I called in Emmanuel Prévost, a producer I knew with considerable animation experience. Patrice Garcia also knew him and the three of us brainstormed about the best way of moving the idea forward. The big question was, "technically, how do we do this?" We didn't want to make the film only in 3D, but also to use real-life elements and sets in studio. That was when the fourth musketeer made his entrance: Pierre Buffin. I'd worked with him on a music video for Madonna and on the special effects for some of my films. His technical expertise is acknowledged around the world. We wanted the project to remain in Europe, so Pierre seemed the ideal collaborator. He joined our little group, in which everybody respected the position and talents of the others.

### **What did you know about animation before you started the movie?**

Absolutely nothing. I was a total novice but my approach was the same as for a regular movie - I wanted to tell a story and create characters. That was no different from my previous films. The way the film was to be made was totally different, however. It wasn't a director behind a camera but behind 200 people sitting at computers. Technically, that was completely new for me, but it truly is the film of a director using a different technique rather than that of a technician trying to direct a film.

### **What was your approach to using these new techniques?**

A genius called Pierre Buffin devised a system that enables you to film an actor's movements without resorting to the usual markers. I was completely free to direct the actors any way I wanted. It's totally new. I couldn't explain to you in detail how he did it, but he did and I was absolutely in awe. That was the best material I could give the animators. I couldn't see myself being on their backs every day - they're too good at what they do. On the other hand, by filming my actors from various camera angles, I could give the animators a full range of references for facial expressions, smiles, intent, attitude and so on. I'm not a huge technology enthusiast - I don't even have a computer or an email address - and my inspiration mainly comes from life around me, real life. So, I protect myself from the virtual world even if it fascinates me and I'm surrounded by collaborators who adore it.

### **You never contemplated making a 100% 3D movie?**

In terms of 3D filmmaking, Pixar is at the summit and Dreamworks just a step behind. Rather than venturing onto their territory, I thought it would be more interesting to come up with something new, something nobody had ever done before. That's the case with this film, which combines 3D characters in action on 3D sets that are based on actual models - we really did make the giant mushrooms you see in the film! That gives a unique picture quality and finish. It's our way of competing with them even if we're a tiny company in comparison to them.

**Did you have a sense of the scale of the project?**

Thankfully, I was totally unaware when I started out on this adventure. I thought it would take a couple of years, not five whole years of my life! Actually, I got pretty down after about two years when there was still nothing to show for all that work. Just imagine, not a single second of footage after two years! I guess Pierre Buffin must have sensed it because he showed me the first few seconds just about a week later.

**Is there a lot of yourself in the character of Arthur?**

Yes, he's 50% like me. Most children have experienced separation or loss in their families, and it's always a real trauma. I went through similar experiences that deeply affected me and that's there in the most "emotive" part of the film. There's also a bit of me in Selenia, a bit in Betameche and some in Max! Having several children myself, I know that it's not always easy to approach issues such as morality and respect - for others and oneself - with them. Writing Arthur's story and having him find answers to those questions was also a way of talking to my own children. They won't listen to me, but if it's Arthur who's talking, it means a whole lot more to them.

**What influence did you have on the design of the characters?**

Influence isn't really the right word. Patrice Garcia and his excellent team made heaps of suggestions and, like the captain of a ship, I had to decide our direction and make the final choices, while highlighting the wonderful contribution each person made.

**Is that also true of Selenia, who seems to have been the object of particular attention?**

Yes, she was a nightmare to design! While most of the characters, such as the King and Betameche, were ready by the second year of production, Selenia was constantly tweaked for four years. There was always some detail that needed attending to... She's a real princess!

**What was your approach to casting the live-action scenes?**

In the back of our minds, we had the idea that there will be a sequel. *Arthur* is a trilogy. And so, when you think of people you'd like to work with, you consider not only their talent but also their personality. They have to be reliable. They have to be people you'd happily spend almost a decade with! Freddie and Mia were perfect from that point of view. They have the talent and the personality!

**Freddie Highmore is particularly impressive for his age. How did you choose him?**

The casting was quite tortuous, flitting between France, the UK and the US. It's very tricky casting a young lead - he has to have a child's innocence and an actor's professionalism because we're asking him to perform constantly and nail his lines and mark every time. I was having a tough time deciding between three English kids and two Americans. Then, a casting director who wasn't working on the project suggested I take a look at some photos of Freddie. *Charlie and the Chocolate Factory* had just been made. I went to see it and I knew immediately. When a child is above the rest, it sticks out a mile and you don't think twice. I've been very lucky because it's the second time this has happened to me. The first time was with Nathalie Portman, who was amazing even at age 11, and now with Freddie, just a fraction older and just as impressive.

**Mia Farrow is an unexpected choice...**

It's rare to find an actress who, like her, has played young romantic leads, then mothers, and now in a very natural progression, grandmothers. She is so obviously sweet and kind. She loves kids and reading stories. I didn't have to think about it very long.

**And then there are the highly prestigious voices...**

Between Disney and Pixar, pretty much every combination has been tried. It's difficult finding a leading actor who has never voiced an animated movie. I knew I wanted Snoop to do Max. I just love his personality and music. When he saw an illustration of the character, he said yes right away and that inspired me to ask other artistes to voice the other characters. Madonna, whom I'm lucky enough to have known for some time, was as swift and efficient as ever. I called her. She agreed. We taped it. As for David Bowie, he's a pure genius. It was a dream working with him.

## **AN INTERVIEW WITH line producer EMMANUEL PREVOST**

*"... we hired "real" actors who actually performed, under Luc Besson's direction, in a draft film in a set of 10 to 12 square meters..."*

Emmanuel Prévost started out in filmmaking with the ECPA, the French military's film unit, where he met many leading French animation directors, such as Jacques Rouxel, the creator of the *Shadoks*, and Stephan Franck. Having closely followed the development of computer animation tools, his technical expertise made him an obvious choice to head up Gaumont's multimedia department, where he met Luc Besson for the first time when the director was developing *The Fifth Element*. In 1998, Emmanuel met Olivier Mégaton at a festival and decided to produce his first feature, *Exit*. To do so, he founded Avalanche Productions, the company through which he has now coproduced *Arthur and the Invisibles*.

### **How did Arthur come into your life?**

The first time Luc mentioned the project to me was in 1999 while we were working together on the international distribution of *Exit*, which I had produced. He showed me a photo of an elf-like character and asked me what I thought. I laughed because I recognized the photo from the Christmas card that Patrice Garcia, with whom I had also worked, had sent me. Luc explained that Céline Garcia had come to see him with an idea for a TV series, but he had suggested turning Arthur into a feature film. He wanted to use the contacts he had made in the US while working on *The Fifth Element* and my animation experience.

### **What was the main difficulty in financing the film?**

All my years in animation told me that a film like this would be very expensive. We had two possible solutions. Either we created an animation department on the Dreamworks model and developed our own technology - with all the potential problems involved in producing your own software - or we found ourselves a partner who possessed the technology and would make it available to the film. That struck me as a far better idea, especially as I immediately thought of Pierre Buffin, the special effects specialist I respect the most in Europe, and perhaps the world. We soon agreed that we had to shoot a pilot episode, which Luc would finance. That turned out to be a good test because I was convinced that we had to achieve American quality on a comparable budget, which isn't easy for a French company. At the time, I asked Luc for several million francs to shoot 1'46" of film. He put up the money and let us get on with it.

### **What were the major technological innovations you developed for this project?**

The principle innovation was our approach. Most often, animated filmmakers come from "in-house", by which I mean they are usually designers or computer graphics artists. What was interesting with *Arthur* was that for the first time we were bringing into the world of animation a "live-action" filmmaker with a distinctive sense of framing and cutting. We had to create a bridge between these two worlds because it was hard to imagine Luc coming in every day to talk to each animator. Also, they could easily underestimate him because he had no animation experience. So, we had to give Luc the tools to find a way into their world. That's why we asked him to shoot a "dummy-run" of the film. We hired real actors to perform under his direction in a space that was no more than 12 meters in circumference, while being filmed by 6-9 cameras. The idea was to use Luc's talent to transcend the animation process, by drawing inspiration from his direction of the actors, for example. The system that BUF developed meant that the animators constantly had at their disposal Luc's dummy-run of the film, the edited storyboard and a scratch soundtrack.

### **Why did you decide to build scale models of the sets?**

Patrice Garcia came up with that idea. From the very beginning, he wanted the look of the finished product to be identical to the photo he gave me. Then, one day, Luc said that he wanted kids to be able to go out in their gardens after they saw the film, pick up a stone and think that maybe they'd find an invisible under it. That meant we were working toward the farthest extremes of photorealism. I had huge faith in the idea of using models but it turned out to be very complex, especially in post-production. As soon as we solved problems of scale and rendering, however, we achieved incredible results. It's quite amazing how *Arthur and the Invisibles* simply doesn't look like any other animated film ever made. That was my biggest challenge and the great originality of this film.

## AN INTERVIEW WITH CG director PIERRE BUFFIN

In the twenty years that Pierre Buffin has been at the helm of BUF Cie, the company has become a world leader in the field of special effects. A CGI specialist, BUF began working in commercials before devising certain special effects for *The Visitors*. The company's work on *The City of Lost Children* captured the imagination of American filmmakers, such as David Fincher, who invited BUF to work on *Fight Club* and *Panic Room*. BUF's distinctively photorealistic special effects can be seen in films as diverse as *Batman and Robin*, *Matrix*, *Human Nature* and *2046*.

*Arthur and the Invisibles* offered Pierre Buffin the chance to fulfill a longstanding dream of creating an animated movie.

**How did this project reach your desk at BUF Cie?**

We'd heard that Luc Besson was developing an animation project. Patrice Garcia and Emmanuel Prévost came to see us, and Emmanuel brought Luc along prior to shooting the pilot of the project. The pilot worked well, so we began to think about how to turn the idea into a feature. The first problem was to establish how much time and money it would take. We'd developed the technology and knew we could make a couple of minutes of film, but the question was whether we could produce over an hour and maintain the quality from beginning to end. It would obviously take a considerable amount of time. In fact, the size of the project was more problematic than the project itself. In the end, though, we realized there wasn't much difference. Let's say that a commercial is a small boat that you know how to sail. If somebody puts you in charge of an aircraft carrier, it's the same principle but you have to anticipate, react faster and earlier.

**How did you put your team together?**

We didn't follow the American model, at all. They have a lot of experience and very qualified people in specific areas of expertise. The division of labor is huge. Over here, we realized that artists coming out of French schools were able to do everything on a film - storyboarding, modeling, animating, rendering, texture mapping... They are much more versatile. It was important not to restrict them to a specific role, but instead to entrust a whole sequence to them. So, we divided the film up into sequences with each group (we call them "tables") seeing their sequence through from "animatics" (rough animation of the characters) to animation, lighting and rendering. Our job, of course, was to ensure a unity of quality between the sequences. In that respect, a CGI-movie has the advantage of being made in layers, so you can always rework things.

**Why hire such young artists?**

We didn't have any choice! There weren't enough animation artists in France and, what's more, there were very few people who were familiar with our software, since all our programs were developed in-house at BUF. So we hired young artists, who were fresh and motivated, with about twenty "old-timers" from BUF to supervise them. This structure and their talent made for a great combination.

**You chose to produce all the animated sequences at a single facility...**

The pilot showed us that it was vital to have the various teams working close to each other. So, we needed a facility where they could be in constant communication with each other. We found an old grain store in Pantin, just outside Paris. It seemed just perfect because it had a huge central space surrounded by smaller buildings, which could house the 3D people, production offices, designers and so on.

**The central space was where you built the scale-models of the sets. Why choose that option?**

One of the issues we had to resolve came from the blend of live-action and 3D. We wanted to avoid the *Roger Rabbit* effect of a marked difference between animation and live-action. On the contrary, we aimed to make the two worlds in our film as similar as possible to get a truly naturalistic effect. When we shot the pilot, we did tests with real vegetation and giant sets to allow the camera to cover everything, but we realized that the best option was to do all the camerawork on 3D while remaining as close to reality as possible. That's where the scale-models came in. Rather than CGI-ing everything, we chose to combine 3D with real-life elements, which give the environment more substance. The models were, in fact, interpreted on 3D by projecting photos of each part of the model into the 3D frame. It was a method we had used for certain special effects and massively increases the realism.

**The other particularity of the film is that it is Luc Besson's first animated picture. How did that change the way you usually work?**

We soon realized that it would be impossible for Luc to be there every day, so we needed to gather as much information as possible in the time he could give us (which wasn't easy when you know his work schedule!). We also knew that it would be difficult for a "traditional" director to explain what he wanted to an artist and then wait two weeks to see the result. The best approach was to give Luc the necessary tools to shoot his film without the technical constraints of animation. That's when we had the idea of Video Motion Capture, a technique we developed for films such as Oliver Stone's *Alexander*. Luc chose his actors and filmed them on video, without sets or props, but with several camera angles. This provided a frame of reference (in terms of cutting and characters) that we could use every day. Prior to that, Luc had run through the whole storyboard with the artists and we had recorded him. All this information was made available to the artists, shot by shot.

**What were the major difficulties you encountered?**

A lot of things are hard to generate in 3D, such as nature, characters, expressions... It's not really a question of difficulties, just that some things take longer than others, such as bringing the characters to life, giving them a real personality.

**Water is usually a major challenge in animation. How did you achieve such striking realism?**

We did numerous tests and tried pretty much everything. We were so scared the 3D images wouldn't be realistic enough, we decided to film the water. We asked production designer Hugues Tissandier and his team to build a section of river. A lighting cameraman helped light it and we started filming... Except that, for reasons of scale, we had to change the camera speed and use 100,000-watt lights so that it would work visually. While we were filming, the vegetation shriveled up and died and the model started smoking! As a result, we used very few real shots, except for the waterfall and the tunnel, when they escape in the Ferrari. Everything else is 3D based on real footage.

**The characters' eyes and movements are also amazingly realistic...**

Personally, I've always been horrified by 3D animation from software that gives priority to mathematical algorithms over manipulation. Ever since we started developing our own animation software, we have always tried to make things as intuitive as possible. I work on the assumption that anybody should be able to animate, but today the background of most 3D animators is more technical than artistic because it's so complicated. As for the eyes, people often say that they reflect the soul and there's a hint of truth in that. That's what's so complex. The eyes take a huge amount of hard work, and even a little cheating.

**Apparently, Selenia is the character who required the most work...**

Selenia was only completed in January 2006, when we had already rendered almost the whole film! Her face kept changing because she's the only truly humanoid character. Arthur and Betameche, with their big round eyes, are clearly elves, but Selenia had to be more photorealistic. It's particularly tricky to make a credible human because everybody is surrounded by the real thing and so the tiniest detail out of place jars immediately. The more stylized the character, the simpler his or her personality, the easier they are to animate. We nailed Darkos and all the other villains very quickly. Also, Selenia is a girl, so she had to be sexy and that's even more complicated. Even with a perfect design on paper, in 3D it was a nightmare! I honestly think that Selenia's pesky personality filtered through to the fabrication. With Arthur, everything was much easier. He was top of the class, as usual.

**At what point do you say to yourself that an image is finished?**

That's the whole problem in our job. It's never finished. Every image can always be improved. You can spend a month on a single frame, one 25<sup>th</sup> of a second. It drives you nuts! Fortunately, we are limited by the schedule... and budget!

**How do you look back on the project now?**

The most important thing for us was to go off the beaten path and make something that was totally distinctive. We realized that it is possible to make a film using a different approach and different methods than the American studios, with an end result that looks just as good. That's the biggest kick I got out of this film. We made it in a different way, and faster and cheaper than we had foreseen!



**AN INTERVIEW WITH actor FREDDIE HIGHMORE**  
Freddie Highmore is Arthur

Thirteen years old and as many films to his name, Freddie Highmore is already a full-fledged TV and movie star. His credits include two films with Johnny Depp, *Finding Neverland*, shot in his native England, and *Charlie and the Chocolate Factory*, directed by Tim Burton. In his young career, Freddie has worked with an impressive list of top directors: after Jean-Jacques Annaud, for *Two Brothers*, and before Luc Besson, for *Arthur and the Invisibles*, he co-starred opposite Russell Crowe in Ridley Scott's *A Good Year*.

**What did you know from Arthur before shooting the movie?**

I read the books before, even some parts in French, and I loved the world of the Invisibles; it is exactly what the children want to believe in: a small universe hidden underneath the grass, where you can speak to small animals, make friend with them...

**Do you feel close to Arthur's character?**

Maybe a little bit. In any case I did take a lot of pleasure getting into such a generous character! His only imperfection is probably the fact that he never thinks enough before he acts... I didn't have any difficulties to identify myself to the part, even if I can't drive a Mosquito, it's too bad!

**Do you work hard before you start shooting? When you perform, we always have the feeling that you are extremely spontaneous...**

Even if there is a natural part, I also work: I think a lot about the character aspects before shooting. His temperament? The way he dresses? What he likes? This way I can get right down to what he is. So basically, I have the feeling that I already know him before we start the movie.

**And how did you react that you saw yourself for the first time, I mean Arthur as an Invisible?**

It was incredible: with a character so well animated and, besides, which has my voice, it's a bit of me - I spent a few days dubbing Arthur - the result was weird to me, it is sort of unexplainable...

**How would you describe Luc Besson's style of work?**

He works extremely hard. All directors must have that thing of always working but when he finishes on set, Luc would go off and would try to do a bit more on the animation to make it out a little bit better. That is why I think this film is so great, probably because of Mia and me but mainly because of Luc.

**How was your collaboration with Mia Farrow?**

She's the ideal nanny; she is just how you want your favourite granny to be, the one all the children dream of. She has so many stories to tell: she was married to Frank Sinatra and she was around when the Beatles were recording their songs!

**As a young spectator, what do you think of the animated parts of the film?**

I think the youngest will like the idea that the Invisibles are two millimetres high and that we can not see them with our own eyes. They all will want to have the same in their gardens! When you see the film, you get drawn into it and you just believe that there are these creatures underneath the ground! This is crazy.

**AN INTERVIEW WITH actress MIA FARROW**  
**Mia Farrow is Arthur's Granny**

Mia Farrow's unforgettable performance in *Rosemary's Baby* (1968) made her a star all over the world, and she subsequently marked American film history with her long collaboration with Woody Allen, whose wife and muse she was for nearly ten years. *Arthur and the Invisibles* is unlike any other film she has made, but it is not the first time Mia has worked with a French director. In 1972, she starred in *Doctor Popaul*, directed by Claude Chabrol!

**It is quite a surprise to discover you in a partly-animated movie: so what did convince you to do this project?**

Three things: Luc Besson, Luc Besson and Luc Besson!

The day when he invited me for lunch to talk about the movie, I assumed he was meeting many actresses on that occasion. So when he asked me if I wanted something to eat, I refused, because I didn't want him to lose too much of his time, assuming that all the candidates to the part could arrive anytime. I was therefore extremely surprised and excited when he chose me for the part at this very lunch.

"Leon: The Professional" is one of my favourite films ever, I also very much liked "The Messenger: The Story of Joan of Arc": I feel very close to his universe and this project appeared to me as the perfect occasion to work together. When he showed me the photos of the farmhouse, I really thought it was my house in Connecticut, it was amazing!

I also felt very close to this grandma character, living alone, raising and taking care of her grandson by herself: it's something that I know very well, being a single mother.

**We effectively feel a real intimacy on screen between Freddie and you.**

We became really close: we spent some time together outside the set, having diner together or discovering the beaches of Normandy.

Freddie is many things and all of them are good: he is a superb actor and he is a good company. He also has a very good perspective of the environment, and tremendous work ethic... It wasn't like working with a kid, it is like working with another - senior - actor but the fun thing is that he is a kid.

**How would you describe Luc Besson's work?**

There are a lot of facets on Luc Besson' personality; some are quite intimidating, and his knowledge about films is undeniable. But the kindness he uses regarding his comedians makes you feel really confident. And I am not even talking about the ideas he always suggests you, bringing so much to your character. I don't know if he has directed many comedies, but he has an incredible flair for comedy.

**What is your opinion regarding the mix between live action shots and animated parts inside the film?**

I usually don't get caught up so much with cartoons, so I was really curious to see how it would look like and I must say the result is just magical: the characters look so real!

I don't know much about the technical aspects; I can barely use a digital camera but I am not surprised that you need years of hard work to attain such a miracle...

## ARTHUR AND THE INVISIBLES

In spring 2005, Luc Besson began shooting the live-action scenes of *Arthur and the Invisibles* working for six weeks with a group of regular collaborators, including first assistant Stéphane Glück, production designer Hugues Tissandier (for the first time since *Joan of Arc*), costume designer Olivier Bériot, and Thierry Arbogast, the director of photography on five of his feature films.

### America in Normandy

Normandy was chosen for the exteriors, which were to be a close reproduction of Smalltown, USA, in the early 1960s. To achieve the picture-postcard image that Luc Besson wanted, costume designer Olivier Bériot drew his inspiration from the very rich illustrations of that period. "There are a lot of documents," he says, "that show situations that appear in the film. For example, we used lots of Ideal Home kind of ads to get the look of the characters, such as the grandmother cooking with her grandchildren. We also relied heavily on the work of Norman Rockwell, which gives a good idea of what seniors were wearing at the time. Also, a lot of Americans post family photos on the internet, so we also had a model for real people in the 1950s." Production designer Hugues Tissandier also did a lot of research to build an image of a typical one-horse town, but with an added obsession - blending live-action and 3D. "I needed to make the live-action segue perfectly into the animated scenes, so we did all we could to make sure the two worlds formed a single visual universe. We changed a lot of the colors to achieve that unity."

### The Special Effects

The main difficulty in shooting the live-action scenes was the interaction with 3D sequences. The VFX were supervised by BUF Cie. The telescope scene, for example, when Arthur shrinks and tumbles into the Land of the Invisibles, was made in six different stages, starting with shots in three separate sections of a giant telescope: the chute that Freddie Highmore slides down; the lens within the telescope that he falls onto; and the end of the telescope that he climbs into. Then came the tracking shot in the garden against the background of a full moon (a powerful light suspended from a crane), which was then re-enacted at the same speed against a green screen with Freddie clinging to a trapeze, so that the special effects team could match the shots together.

Throughout the shoot, the crew was amazed by the professionalism of the young actor - "twelve years old but forty years in the business!" exclaims Stéphane Glück, who also praises Mia Farrow's simplicity: "like all the very best actors, she is amazingly open and giving."

### Remaking Nature

It may be fairly easy to change the shape or color of a house, but it's not so easy to wait for a garden to evolve with the seasons. "What was on screen couldn't be allowed to change from one day to the next, which meant stopping the course of nature. So, we had fake trees and flowers in among the real ones. We replanted every two weeks so flowers bloomed regularly! The same approach was applied to the kitchen garden and fields around the grandmother's house, which was purpose-built next to a large oak tree. The Bogo-Matasalai tribesmen are not authentic Masai warriors either, but actors chosen for their height - the smallest stands 1m95, or 6 feet 6 inches, and the tallest was 2m10, or 7 feet. They were then dressed in colorful costumes with bead necklaces. For the scenes in the long grass, we had them wearing 20 cm high platform heels so they would seem even taller."

## ARTHUR AND THE INVISIBLES

### - SETS AND CHARACTERS: THREE YEARS OF DESIGN WORK -

The design team was one of the first to be brought together, even before the script was complete. The team was built around Patrice Garcia and Philippe Rouchier, co-art directors. In 2001, they both worked on the pilot. In January 2002, two other artists, Nicolas Fructus and Georges Bouchelaghem, joined them to design the whole artistic universe of *Arthur and the Invisibles*.

#### FIRST DRAFTS

"We were left alone in the studio for a while without any real indications, so that we would come up with a wide variety of ideas. We had no preconceptions of what the Invisibles looked like," explains Georges Bouchelaghem. Philippe Rouchier adds, "We started work on the project with just a basic idea of the story - miniscule creatures who live underground, a villain, and a little boy who passes into the underground world. So we had to ask ourselves dumb questions like 'What do the Invisibles look like?' 'How do they walk?' 'What do they wear?' 'What are their houses like?' 'Where's the King's palace in relation to the village?' and so on. We had enormous freedom and our sketches ran the whole gamut. After a while, Luc Besson came to see us, chose the best direction to keep moving forward and installed a kind of unity. After that, we simply had to adjust our drawings to fit the script."

#### AN INTERVIEW WITH PATRICE GARCIA, Creator of the universe and co-artistic director

Patrice Garcia is the man behind the stunning visual universe of *Arthur and the Invisibles*. A comic book author best known in the cinema for his special effects expertise, he first worked with Luc Besson on *The Fifth Element* in 1992. A big fan of magical worlds and fantasy, along with his wife Céline, Patrice was the first link in the chain that led to *Arthur and the Invisibles*.

#### How did the Invisibles' world come into being?

Originally, Arthur came out of some research I was doing. I wanted to see what effect I could achieve with elves made out of watercolors and scraps of fabric. It all began, down on my hands and knees in the forest, taking photos of these watercolor cutouts under mushrooms. Gradually, the characters took shape and Céline added Arthur's story. We've both always been fascinated by the world of elves, which was already present in the first comic book we did together.

#### How did you produce all the preparatory graphics?

We brought together a team of graphic artists before the script was finished. The bare bones of the story were enough for them to work from. In fact, it was important to give them free rein. I provided some preliminary sketches and suggested various possibilities, and the team got to work. Then, Luc Besson would decide what he liked. It was also important to create a universe that would function cohesively. The film's sets and characters all came out of that process, a bit like piecing together a puzzle. For Selenia, there were times when we had thirty faces pinned to the wall, with subtle variations in expression. She was the character who changed most frequently. We started out with the idea of a princess who was more childlike than sexy and, in the end, it was Pierre Buffin who developed the final design, on 3D. Similarly, Arthur was much more "insectoid" when we shot the pilot.

#### Which you directed...

Yes, we had to test the feasibility of these animated characters in a real world. Luc Besson provided the funding to build the models, shoot it and, with Pierre Buffin, animate Arthur in the environment we created. We had no guarantee that the various textures would match but the initial result was very positive.

#### What were the main references for your work?

Nature, essentially. We used heaps of photos of vegetation textures and shapes. I got a lot of my inspiration from the south of France. For example, I remember using a stone from the Isle of Gaou in the Mediterranean as the basis for Maltazard's world. I also owe a lot to the work of artists, such as Patrick Woodroffe, an English painter, Brian Froud and Alan Lee (the art director on *Lord of the Rings*). They fired my imagination and influenced my own art.

*AN INTERVIEW WITH* co-artistic director PHILIPPE ROUCHIER,  
Who worked on the film since 1999

After graduating from Ecole Emile Cohl in 1991, Philippe Rouchier began his career as a commercial illustrator before moving into animation. He was lead layout artist on the *Ivanhoe* series for France Animation, then artistic director on *Le Magicien*, produced by Gaumont Multimédia.

Philippe started working on *Arthur and the Invisibles* in 1999, as digital matte artist on the pilot short. When the production of the feature film began, he embarked for five years of adventure as lead artist and co-artistic director. The conception of *The Art Of Arthur and the Minimoys* further enabled him to explore the interaction between writing and graphic design.

At the same time, an attraction to predictive symbolism has led Philippe to create three decks of tarot cards, one of which, *L'œil de Myrddin*, was commercialized by France Cartes in 1994.

#### THE CHARACTERS

These key elements of the film were the object of a particularly meticulous development process, taking up 100% of the artists' time in the first six months they worked together. Some characters were constantly tweaked in the years that followed. "The creation of the main characters took a very long time, especially Selenia," recalls Georges Bouchelaghem. "Because he's the archetypal jolly, plump character, Betameche was in place much quicker. His physique is a perfect match for his personality. Similarly, the minor characters were pretty easy to develop because they were marked by strong traits of personality. They're the ones who are most recognizable in the early drawings." Most of the lead characters were further modified when they were passed on to the 3D artists. In fact, it was at this stage, that the definitive design of Selenia emerged. "But right to the end," says Philippe Rouchier, "we were pleased to see that our work was respected and that, at each stage, the characters took on a new dimension."

#### THE SETS

There were two distinct worlds that needed inventing: that of the Invisibles, which is made entirely out of natural objects, and that of Maltazard - Necropolis - made of stone and metal and other objects recycled from the human world up above. Besides illustrations and paintings, the design team logically drew their inspiration from nature. "We built up a database of photos we took during weekends in the country, in the hills or by the sea," explains Nicolas Fructus. "For example, the station, which I did a lot of work on, was inspired by a thousand-year-old chestnut tree in Savoy that I sketched extensively." The artist also slipped a reference to Parisian metro stations into his design. "It's a little nod to Guimard, who designed the station entrances," says Nicolas, "because what's special about his work is the blend of design and reality. He always took into account the practicality of his decorative elements."

The team's drawing provided the basis for the models made by Hugues Tissandier's crew of set builders. For Philippe Rouchier, this process was another source of inspiration. "We got a real shock," he says, "after about two years, when we saw the first models. It was as if our drawings had come to life and we had a very positive two-way dialogue with the set designers. They asked us to specify certain details and we produced more drawings to cater to their needs." Georges Bouchelaghem adds, "That's what's unique about this project. We were lined up to work on *Arthur and the Invisibles* for a year at the most but our contribution wasn't just restricted to graphic design. We stayed on to work with the production design team and, sometimes, we worked on their models with them!"

## ARTHUR AND THE INVISIBLES

### - A VISUAL REVOLUTION -

Renowned for its concern for photorealism, BUF brought to the film techniques developed in-house prior to the project. In particular, they enabled Luc Besson to “direct” the animated characters as if they were real actors.

#### *AN INTERVIEW WITH* production designer HUGUES TISSANDIER

Having worked on several films with Francis Veber, Hugues Tissandier’s collaboration with Luc Besson got off to a highly successful start when he won a César award for Best Production Design for *Joan of Arc* (2000). Five years later, the two men have teamed up again for another major project, which involves a dual mission for Hugues Tissandier: designing and building the live-action sets and supervising the construction of scale-models used for the 3D sequences...

#### **What was the purpose of your dual role in the live-action and 3D sequences?**

I was responsible for melding the two worlds together and making sure that the colors and shapes in the live-action scenes matched those in the animated sequences. I worked using models that took six months to design and over a year to sculpt and build. It was a huge challenge and I have to say that BUF’s idea of having everybody working at a single facility ensured maximum efficiency and a healthy sense of competition between departments. Our imagination was stimulated at all times.

#### **How did you design the models?**

When I started thinking about them, the graphic artists had already been working for three years on illustrations of the Invisible world. I just had to give their designs volume, get them as close as possible to the look Luc wanted and add details, like the 500 miniature streetlights in the Invisible village, made with real dried flowers. We spent whole mornings at a market near Paris because, working on the assumption that Invisibles didn’t have IKEA, we wanted to use natural elements. So there are numerous tiny details in the background, like pinecones, shells and roots, all on the Invisible scale. The camera doesn’t necessarily linger on them but they add something extra to the environment.

#### **How many people did you have working with you?**

Around sixty for the live-action scenes and seventy working on the models from A to Z. Obviously, they all came from different horizons with a specific talent for working with wood, plastic, or other materials. When all these talents were thrown into the pot, a tight and complementary team emerged, highlighting each person’s skills but using them in a common aim: the film’s design.



## LARGER THAN LIFE SETS

The main challenge presented by *Arthur and the Invisibles* lay in the transition from live-action to 3D animation sequences. At an early stage, Pierre Buffin and Emmanuel Prévost decided to build models that would be photographed then interpreted in 3D. As Gilles Boillot, the supervising set designer, explains, this technique offered "particularly realistic sets, with textures extremely close to the real thing." A better-looking end-result and time efficiency were the reasons for this choice, which involved 3D animators and set designers collaborating closely at various stages, using a technique developed by BUF to ensure the director had the greatest possible freedom in choosing camera movements.

- Creation of a simple three-dimensional model, known as a "white model", carved out of polystyrene and roughly painted, enabling 3D modelers to block the animated characters' movements and check details of scale, such as the height of doors.
- Positioning of slots in the final scale-model to allow a choice of angles for the digital camera.
- Lighting of the scale-models to be in phase with that of the CG characters, before being photographed.
- Construction of the final scale-models combining natural and manmade elements.
- Photography of the models from every angle necessary for their interpretation in 3D.

*The models were created using designs and sketches provided by the graphic artists. All that remained was to give volume to these images, with two main concerns:*

- **Defining scale.** Gilles Boillot says, "We had to find the ideal size, to allow the photographers space to work while retaining the highest degree of precision. For obvious reasons, we couldn't make the models on a scale of x1 because the Invisible village, which was the biggest, would have had a diameter of just 3 meters. On the other hand, a scale of x10 was inconceivable, so we went for a compromise of x3, with a few exceptions. To emphasize the idea of scale in the film, we dressed the models with as many natural elements as possible - snail shells, walnuts or hazelnuts are impossibly large in the Invisibles' world."
- **Imitating nature.** The models were to be photographed close-up, so it was important to get the texture of the components right. "Painting was out of the question," says Gilles Boillot. "It would have given an artificial effect, so we used real foliage, roots, moss and so on that we bought at market or picked in the forest and covered in resin to resist the passage of time. We combined them with manmade elements based on vegetable molds for a more natural finish. It's impossible to pick out the real leaves with the naked eye. At the very end, set dressers and artists were brought in to give the whole thing a lived-in look. "

## ARTHUR AND THE INVISIBLES

### BRINGING THE CHARACTERS TO LIFE: STORYBOARD AND "DUMMY RUN"

For the 3D animators, the particularity of *Arthur and the Invisibles* was being directed by a filmmaker who didn't come from the world of animation. BUF devised two tools that enabled them to understand Luc Besson's intentions.

- **A storyboard commentary.** Luc Besson recorded a commentary, going through the storyboard supervised by Patrice Garcia panel by panel. Thanks to software developed by BUF, the animation artists could then bring up on their computer screen Luc Besson's commentary and the relevant panel in the storyboard, even four years after the commentary was recorded!

- **The dummy run.** In studio, Luc Besson filmed every scene in the storyboard with a group of actors, whose movements were recorded by several cameras. This technique, also developed by BUF, is similar to video motion capture, but does not require markers. It enabled Luc Besson not only to block camera angles and frames but also to direct the characters and develop their personalities on screen. Each of the actor's movements and facial expressions was made available to the animation artists responsible for each sequence. Also, a scratch soundtrack was recorded to enable the artists to work on lip-sync movements.

The sound proved a vital tool in bringing animated characters to life. As Guillaume Bouchateau, chief sound editor, explains, "the big problem on an animated picture is making the characters truly exist, which means reproducing all the barely perceptible sounds that make them who they are. In a live-action movie, it's hardly noticeable but, when they move, characters make subtle, almost inaudible sounds, which define them. On *Arthur and the Invisibles*, we had to invent the sounds produced by animated characters." So, each character has a particular "color" - the chink of a necklace for Selenia, small jewels for the king, leather for Arthur. The Foley artists even used leeks and sweet peppers to create Maltazard's distinctive gristly sound!



## 3D: OVER 100 ARTISTS WITH A UNIQUE AIM

The 3D animation teams assembled by BUF Cie worked solidly for three years at the production facility just outside Paris to create the animated sequences in *Arthur and the Invisibles*. On average, the film required the input of 20 supervisors and 100 artists at any one time.

### 1. The setup

The very first stage in the creation of 3D characters. The specificity of the film's characters is that they are all developed from the same "generic human" rig developed by BUF. The "generic human" has all the anatomic attributes that allow the model to be deformed and animated: a complete skeleton, subcutaneous muscles, a tongue, 32 teeth and so on.

### 2. Set design and construction

Most of the sets for the animated sequences were interpreted in 3D from scale-models. The remainder, especially the exteriors, such as the grandmother's backyard, were generated entirely in 3D, a highly time-consuming task. Jérôme Platteaux, BUF's technical director, liaised between the modelers and the set builders. He says, "Gilles Boillot, the set designer, and I tried to be as efficient as possible by determining which part of a set needed to be built as a model and which could be purely CG. For example, it wasn't absolutely necessary to build the glass props. In the same way, the characters' actions as depicted in the storyboard generally indicated if we needed to build a door or not, depending on whether the character interacted with it or not. But the most time-consuming part was to reconstitute the organic environment in 3D: reconstructing the vegetation, ground, roots, etc, and animating them."

### 3. Mapping

Mapping is the process of adding texture to the sets. This is the first stage of rendering and follows the 3D interpretation of the scale-models. For *Arthur and the Invisibles*, it was important to capture the texture of the materials used in the scale-models, especially in the close-ups, and recreate that quality of texture for the 3D generated sets.

Xavier André, the mapping supervisor, says, "The biggest challenge was to capture nature and make the images as photorealistic as possible. I had to choose colors and textures, and also the way elements of the set would react to light. For example, grass is in fact pretty translucent. If you hold a blade of grass up to the light, you can see through it. We had to do a lot of research to achieve that effect, especially in scenes that matched images shot on 35mm - the 3D grass had to react in the same way as the grass on film so that the transition was totally invisible. It was a tough challenge and that part of our job was much more complicated than with manmade objects."

### 4. Lighting

The lighting crew is involved at two stages of the 3D process. Firstly, in discussions to determine the lighting plan. Lighting supervisor David Verbeke explains, "As soon as the polystyrene models are ready, we define the lighting plan by computer, so we're ready to light the final scale and 3D models. We have to be able to achieve all the lighting effects using real lights. We can't cheat using 3D software. The aim was to be as naturalistic as possible, working in much the same way as a traditional lighting cameraman."

Secondly, once the scale-models are ready and preliminary animation begun, the lighting is put in place along pretty traditional lines. "Basically," says David Verbeke, "we have a main overhead source, to which we add lateral sources. The characters are lit separately to highlight them and draw the audience's eye."

### 5. Finalizing a sequence

This is a key task, which involves putting together and harmonizing all the elements produced by other artists and technicians and ensuring the final look of the film. Yann Avenati, sequence supervisor, underlines the importance of this role at the beginning and end of the process, "It's really about putting into pictures exactly what Luc Besson wants. We use the storyboard and dummy run to create preliminary animatics\*, which gives an overview of the scene, before working on it layer by layer to improve it with every pass." In pure animation terms, says Yann Avenati, the dummy run is not enough because "it gives the story coherence," but constantly needs reinterpreting since the actors on screen are morphologically different than the 3D characters. And sometimes a re-shoot is necessary to complete a sequence, or some scenes can't be acted out, like the mosquito attack sequence. "Once the

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animation was in place, to dynamize the edit, we were asked to create the attack scenes from nothing. That way, we were able to put forward a number of animation suggestions."

## 6. Special Effects

It might seem incongruous to talk about special effects in a film that is one long special effect but there exist a number of creative tools to animate everything that can't be done "by hand". For *Arthur and the Invisibles*, SFX supervisor Dominique Vidal took charge of "all the complications born out of the dynamics of objects and fluids, such as water, dust particles, hair and fur, splashes, explosions and so on."

Technically, the animation of water has always posed problems for special effects companies the world over, constantly providing new avenues to be explored. Waterfalls, in particular, are a complex physical phenomenon to calculate since they involve billions of drops of water. The other great challenge was in shots that recreate nature. "We had to find an animation technique for the plants," says Dominique Vidal, "once they had been created by the set designers. We couldn't ask the animators to animate the leaves and petals one by one! Obviously, we spent a lot of time observing nature. It's better than watching CG films of nature, which are like photocopies of photocopies."

Finally, it was vital to adapt to the Invisible scale and "to think about what happens in terms of effects when you're 1 cm tall. For example, at that size, you can distinguish each of the particles, which constitute what we see as a beam of light."

## 7. Visual effects

Digital visual effects include all the effects generated in post-production for live-action scenes shot against a green screen. There are a certain number in *Arthur and the Invisibles*, such as when Arthur shrinks or his grandmother visits the antique-dealer - the whole backdrop was a visual effect.

Christophe-Olivier Dupuis supervised these digital effects. He admits that he spent a long time on the final scene of the film, which combines live-action footage and 3D animation as Arthur speaks to Selenia, who is perched high in a tree. "The tracking shot Luc asked for was so complicated the camera movement was broken down into four parts and matched together seamlessly in post-production. A good special effect is one that nobody notices!"

## 8. Research and development

This is the department without which nothing would be possible because it is where all the software for an animated picture is developed. Xavier Bec heads up BUF's R&D department. He says, "We significantly improved tools that we already had up and running, especially in the animation of characters using a dummy run for reference or in the interpretation of 3D models. We also combined different techniques, especially for the water, which is the hardest element to animate because it is constantly moving and changing form. It's difficult to find the perfect solution. It's more of a gradual progression and this film enabled us to move a long way forward."



*AN INTERVIEW WITH GEOFFROY NIQUET,*  
Digital animation supervisor

**What is the role of a general supervisor?**

Multi-tasking! To begin with, we had to define production techniques and methods. Once the pipeline was up and running, each supervisor could take over, reducing my role to technical advice or slight adjustments. The creative side of the job involves overseeing the animation throughout the process. I was the intermediary who transmitted Luc Besson's requests to the artists, or even anticipated them sometimes, I hope. It's a wonderful job that gives you an overview of the film and the production process.

**How is it possible to keep every element of such a huge project under control?**

You have to make technical decisions that mean that corrections are made as early as possible to make them less burdensome. You also need good organization and versatile artists so you can reassign people depending on where the priority is. You have to be on top of the situation every day, which means preempting difficulties. Running a team of this size means you can develop impressive momentum, but negotiating a turn of any kind takes time.

**Was it a problem that Luc Besson was not an animation director?**

No, because he solved a lot of questions by shooting the dummy run of the film before the animation process even began. His vast experience as a director easily made up for his rawness in the animation field. It made our jobs easier and saved us time.

**3D FACTFILE**

225 people working on site in Pantin. All of them were working on their first ever animated feature and, for 200 of them, this was their first ever job.

27 months to produce the film's animated sequences.

20 million images calculated.

60,000 working days (or 164 years) to see the film to fruition.



## ARTHUR IN MUSIC

Luc Besson asked his regular accomplice, Eric Serra to write the score for *Arthur and the Invisibles*. A multiple award-winner for his film scores and expert in composing in sync with the pictures, Eric found Luc Besson urging him to adopt a new technique...

**What was Luc Besson looking for in the music of *Arthur and the Invisibles*?**

He wanted a beautiful symphonic score evocative of great adventure movies like *Lord of the Rings*, *Indiana Jones* and *Star Wars*. It had to be beautiful, grandiose and magical all at the same time! To achieve that, he totally unnerved me by insisting that I didn't compose while viewing the film, which is the way I always work. In fact, I had already composed ten minutes of music using my usual method, but when he listened to it, he said he didn't like the themes I'd written. That was a big shock because I was pretty confident that I'd got it right! That was when he asked me to compose without watching the film. I've known him for a long time and whenever he has one of those off-the-wall ideas, it's never by chance. So I chose to put my faith in his intuition, because I was sure there was a good reason behind him asking me that. The next month was awful. I had moments of sheer panic and doubt, but I wrote a lot of music, ranging from action themes, romance, suspense... And when Luc came by a month later, he loved it! He was right to encourage me to change my approach so that each theme would stand on its own. If it works without the picture, then it must be good. Just to complete the story, he also ended up using the ten minutes I had initially composed, which he had claimed he didn't like.

**Are their other innovations in the score?**

It's the first time in ages that I have composed for a full orchestra - strings, wind, brass and percussion. For the magical element that Luc wanted, I also added a choir. So there are 96 instruments and 40 singers in some parts! Besides that, I worked with the people I am accustomed to working with, arranger Geoffrey Alexander and sound engineer Nick Woolage. I recorded the orchestral part of the score (99%) in London, with the Rolls Royce of session orchestras, as usual.

**Did the fact that this was an animated picture influence your work?**

Not really. It's more the film's fantasy world that inspired me because it's conducive to dreaming. Moreover, and this isn't specific to animation, it's a very musical film. There are only a few seconds without music!

**And the fact that the film is aimed at younger audiences?**

I wondered about that right to the very end and I think it only influenced the comedic scenes. I really let myself go, with a result that verges on Tex Avery cartoon music. On the other hand, there was no holding back in the action scenes or slightly scary scenes on the pretext that it would be too violent for children. On the contrary, the music Luc Besson cited was far removed from childhood pictures, because it included Danny Elfman and extracts from the scores of *Dracula* and *Pirates of the Caribbean*.

**Did you feel extra pressure writing for a film voiced by musicians such as David Bowie?**

As far as Bowie was concerned, yes. He's an artist I have always adored, an absolute genius! In the film, it's as if he's singing his lines because his voice is so musical. I wanted my score to highlight that musicality, like an accompaniment to what he was singing. And I couldn't help thinking about the film's première. I wanted him to like the music and be there to tell me! In fact, Maltazard's main theme, in his first scene, was the last one I composed. I put a lot of pressure on myself and I waited for the very last minute to write it but I was very happy with it in the end because it had matured within me over a couple of months.

**After all the films you have done with Luc Besson, were you surprised on seeing his first animated picture?**

The surprise came in the fact that the film is inimitably Luc Besson, in the framing, cutting and also in the animation. It's a wonderful film. Every time you see it, you pick up on something new. I'm convinced that it will be like *The Big Blue* - people will go back to see it again and again!

## ARTHUR AND THE INVISIBLES - THE SOUND DESIGN -

### THE SOUND DESIGN

The sound design of the film proved crucial for the characterization and realism of the animated sequences. The film included so many sounds and so much music, and the sound crew was so small (voluntarily limited to five people at most), that the soundtrack of *Arthur and the Invisibles* took eighteen months to complete, as opposed to fifteen weeks on average for a feature film.

The first difficulty the sound supervisor had to overcome was the question of scale. Guillaume Bouchateau, chief sound editor, says, "We kept thinking back to something Da Vinci said: 'a small sound heard up close is much louder than a large sound heard from far away'. The whole problem was to work out how sensitive your hearing is when you're a few millimeters tall. At that height, a toothpick falling must sound like a tree crashing to the ground."

Another of the sound crew's objectives was to distinguish the film's diverse environments, ranging from the simple, almost clichéd organic sounds in the human's world to the sound-rich world of the Invisibles, "inhabited by distorted jungle sounds", and the much more metallic mood of Necropolis.

Last but not least, it took a lot of imagination to dream up the language of all the creatures in the film. How does a centipede bellow? What does an earthworm or Mül-Mül sound like? Sound designer Alexis Place paid particular attention to the sounds produced by the mosquitoes in the battle scene. "First of all," he says, "we thought of recording instruments that make a sound comparable to the noise of a leaf when you blow on it, but the result was pretty unconvincing. So, we added the sound of automobile or airplane engines that we doctored and chopped up into small bits. Then, we added the sound of a bumblebee trapped in a bell jar. We had to find the most dynamic combination with an accent on constantly innovating. Generally, we recorded as many sounds as we could on our own rather than resorting to sound libraries."

## CAST LIST

ARTHUR	Freddie Highmore
GRANNY	Mia Farrow
ARCHIBALD	Ronald Crawford
ARTHUR'S MOTHER	Penny Balfour
ARTHUR'S FATHER	Douglas Rand
DAVIDO	Adam Lefevre
MASSAI CHIEF	Jean Betote Njamba
ELECTRICIAN	Serge Blumental

### WITH THE VOICES OF:

ARTHUR	Freddie Highmore
SELENIA	Madonna
BETAMECHE	Jimmy Fallon
THE KING	Robert De Niro
MIRO	Harvey Keitel
THE TRAVEL AGENT	Chazz Palminteri
FERRYMAN	Emilio Estevez
MAX	Snoop Dogg
KOOLOMASSAI	Anthony Anderson
DARKOS	Jason Bateman
MALTAZARD	David Bowie
ARCHIBALD	Ronald Crawford
MINO	Erik Per Sullivan
SEIDES	Rob and Nate Corrdry

### REFERENCE DRAFT FILM FOR ANIMATION

ARTHUR  
Barbara Kelsch

SELENIA  
Toinette Laquiere

BETAMECHE  
Douglas Rand

THE KING  
Regis Royer

MALTAZARD  
Christian Erickson

MIRO  
Irene Palko

MINO  
Barbara Weber Scaff

GUARDS  
Tonio Descanville

SEIDES  
Matthew Gonder

